

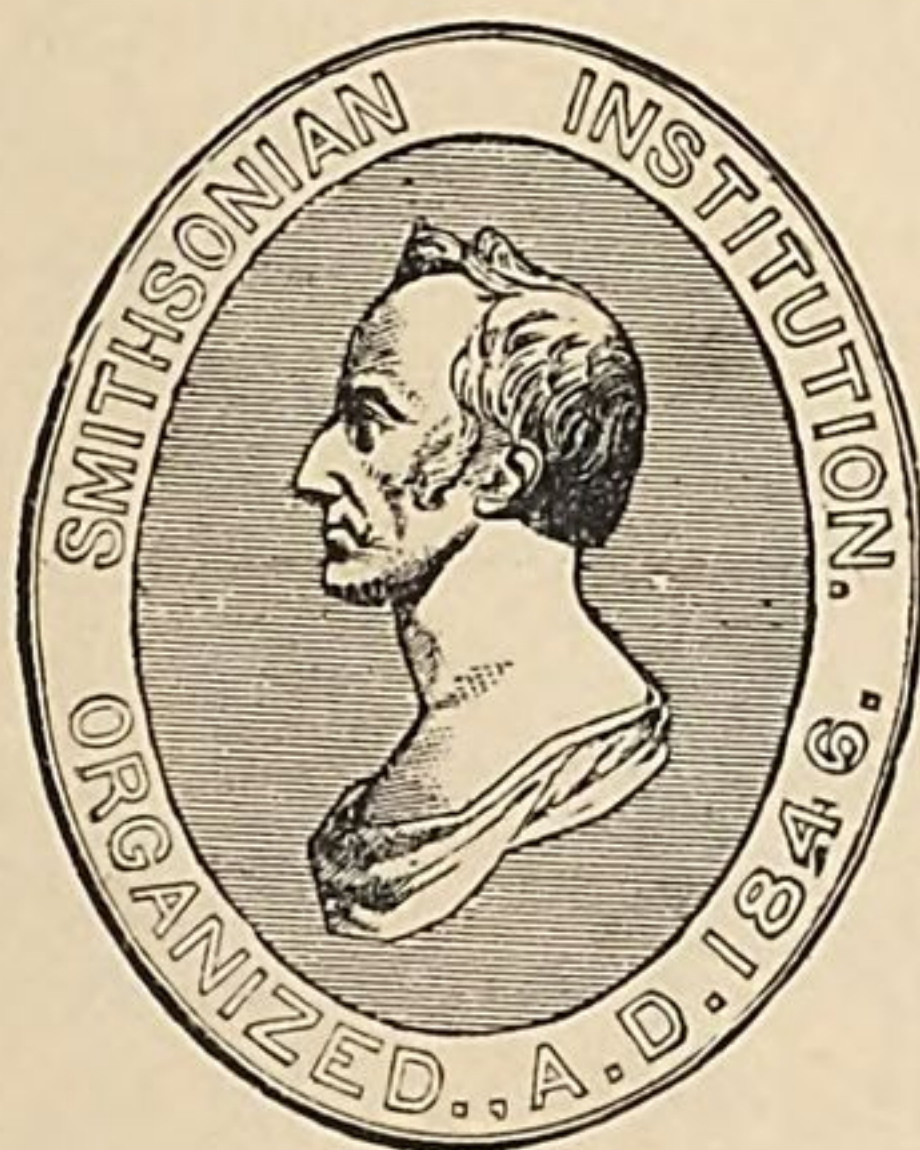
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SMITHSONIAN

MISCELLANEOUS COLLECTIONS.

VOL. XXXII.



"EVERY MAN IS A VALUABLE MEMBER OF SOCIETY WHO BY HIS OBSERVATIONS, RESEARCHES,
AND EXPERIMENTS PROCURES KNOWLEDGE FOR MEN."—SMITHSON.

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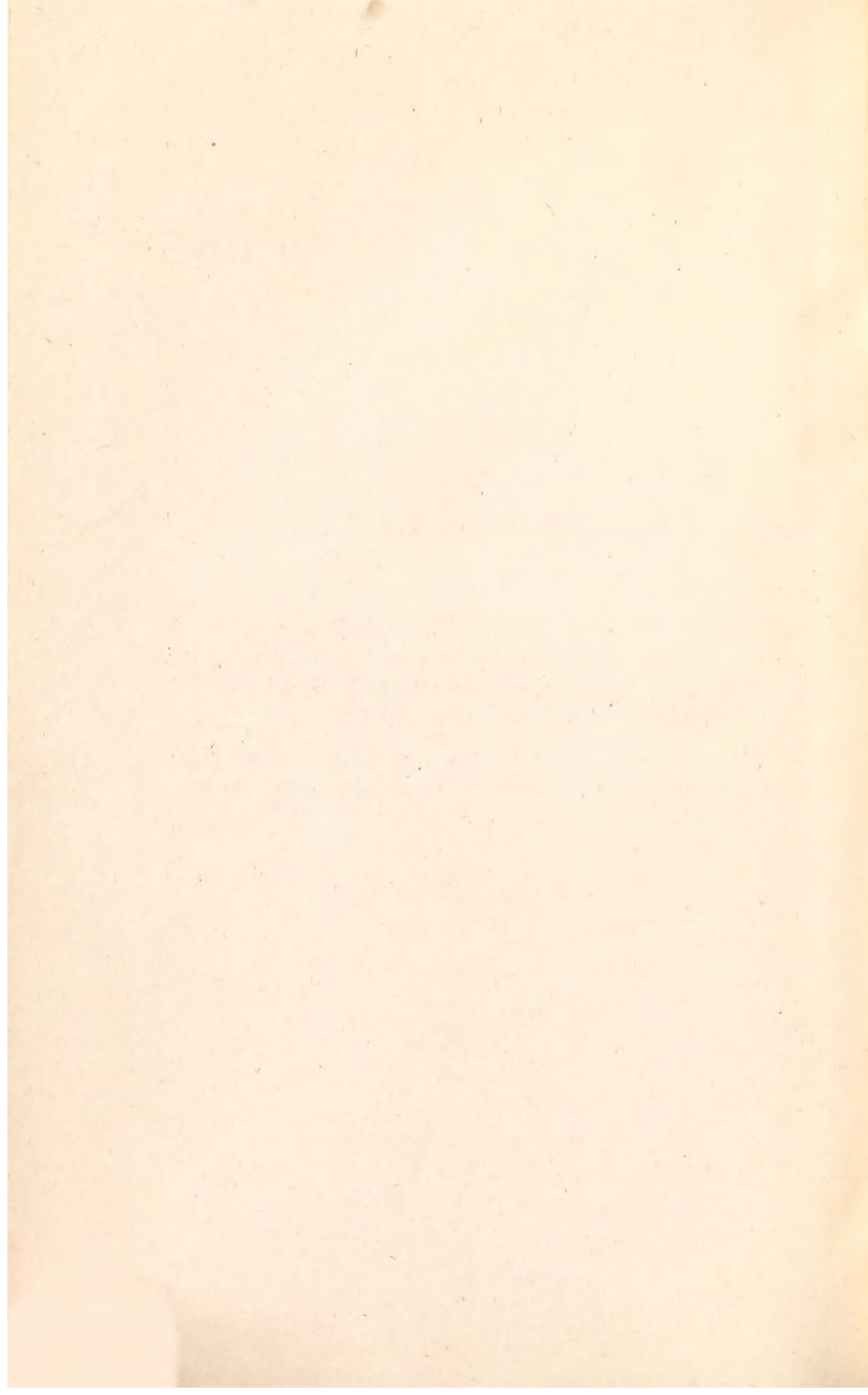
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S. P. LANGLEY,

Secretary S. I.

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- ARTICLE I. (No. 659.) THE CONSTANTS OF NATURE. PART I. A
TABLE OF SPECIFIC GRAVITY FOR SOLIDS AND LIQUIDS.
[New Edition: revised and enlarged.] By FRANK WIG-
GLESWORTH CLARKE. 1888. Pp. 420.
- ARTICLE II. (No. 658.) INDEX TO THE LITERATURE OF THE SPEC-
TROSCOPE. By ALFRED TUCKERMAN. 1888. Pp. 433.



SMITHSONIAN MISCELLANEOUS COLLECTIONS.

— 659 —

THE CONSTANTS OF NATURE.

PART I.

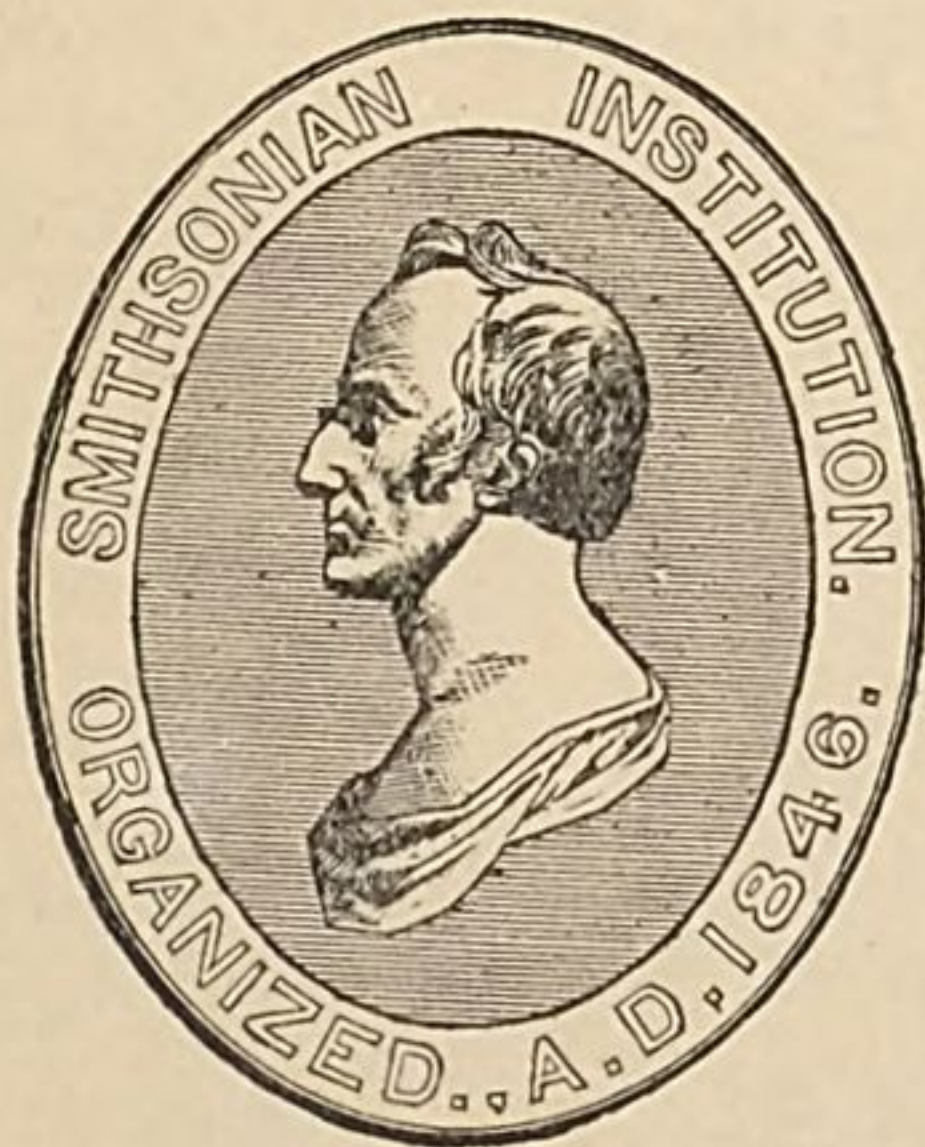
A TABLE OF SPECIFIC GRAVITY FOR SOLIDS AND LIQUIDS.

[NEW EDITION. REVISED AND ENLARGED.]

BY

FRANK WIGGLESWORTH CLARKE,

Chief Chemist U. S. Geological Survey.



WASHINGTON :
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INTRODUCTION.

Early in 1872 I submitted to the Secretary of the Smithsonian Institution, the late Joseph Henry, a manuscript entitled "A Table of Specific Gravities, Boiling Points, and Melting Points for Solids and Liquids." It was accepted for publication, and in February, 1874, the printed copies were ready for distribution. For years previously Professor Henry had had in mind the publication of a series of similar tables somewhat upon the plan long before suggested by Babbage, and accordingly my modest work was given the somewhat ambitious title of "The Constants of Nature" and made the first part of the proposed undertaking. Subsequently Parts II, III, and V were furnished by myself and Part IV by Professor G. F. Becker, and in 1876 I also published a supplement to Part I.

The following tables form, in effect, a new edition of Part I, completely revised, rearranged, and brought down as nearly as possible to the date of printing. They are, however, modified by the omission of boiling and melting points, except when such data seemed essential to the proper identification of a compound, on the ground that the magnificent tables of Professor Carnelley already supply that want. I have limited myself to specific gravity alone, following in the main the plan of arrangement adopted in my earlier work, with such changes as were made necessary by the later developements of chemical thought. Constitutional formulæ have been used, not according to any fixed rule, but according to convenience, and their adoption has been governed, to some extent, by the limitations of the octavo page. All other details have been subject to the same limitations, and it is hoped that their absence will be compensated for by the almost uniformly full references to literature. Some data could not be traced back to their original sources, at least not without unwarrantable labor, and most of these formed part of an early table prepared nearly twenty years ago for my own private use. A few determinations are accredited to standard works of reference, such as Watts' Dictionary, Dana's Mineralogy, and the like, and many have been drawn from the Jahresbericht. Absolute completeness cannot, of course, be claimed, and in some directions it has not

even been attempted. Among minerals, only those having approximately definite formulæ are given, and indefinite substances have been excluded altogether. The tables aim at reasonable completeness only as regards *artificial substances of definite constitution*, and all else is gratuitous. A good many determinations of specific gravity have been unearthed from doctoral dissertations, school programmes, and similar foes of the bibliographer, and doubtless other data so printed have escaped my notice altogether. There is a weakness of human nature which, masquerading as patriotism, sometimes leads men of science to bury valuable researches in obscure local publications, and a compiler may never flatter himself that no such paper has eluded his vigilance. I shall be glad to receive notice of all omissions, and will try to rectify such or other errors in future supplements or appendices.

A word in conclusion as to the extent of the table. They contain the specific gravities of 5,227 distinct substances and 14,465 separate determinations. The original edition gave only 2,263 substances, to which nearly 700 were added in the supplement. The increase is a noteworthy indication of existing chemical activity.

F. W. CLARKE.

WASHINGTON, *June* 20, 1888.

EXPLANATORY NOTES.

In references to literature the following abbreviations have been used. In each case, as far as practicable, series, volume, and page are indicated, the page reference signifying, according to circumstances, either the first page of the paper cited, or else the actual page upon which the determination is given. The former rule applies to pages containing many data; the latter to cases in which the specific gravity datum is merely incidental.

A. C. J.—American Chemical Journal.

A. C. P.—Annalen der Chemie und Pharmacie.

A. J. S.—American Journal of Science.

Am. Chem.—American Chemist.

Am. J. P.—American Journal of Pharmacy.

Am. Phil. Soc.—American Philosophical Society.

Ann.—Annales de Chimie et de Physique.

Ann. Phil.—Annals of Philosophy.

Arch. Pharm.—Archiv für Pharmacie.

B. D. Z.—Die Beziehungen zwischen Dichte und Zusammensetzung bei festen und liquiden Stoffen. Leipzig, 1860.

Bei.—Beiblätter zu den Annalen der Physik und Chemie.

Ber.—Berichte der Deutschen Chemischen Gesellschaft.

B. H. Ztg.—Berg-und hüttenmännische Zeitung.

B. J.—Berzelius' Jahresbericht.

Böttger.—Tabellarische Uebersicht der specifischen Gewichte der Körper. Frankfurt, 1837.

B. S. C.—Bulletin de la Société Chimique.

B. S. M.—Bulletin de la Société Française de Mineralogie.

Bull. Acad. Belg.—Bulletins, Academie Royale de Belgique.

Bull. Geol.—Bulletin de la Société Géologique.

Bull. Heb.—Bulletin Hebdomadaire de l'Association Scientifique de France.

Bull. U. S. G. S.—Bulletin of the U. S. Geological Survey.

C. C.—Chemisches Centralblatt.

C. G.—Chemical Gazette.

C. N.—Chemical News.

C. R.—Comptes Rendus.

D. J.—Dingler's Polytechnisches Journal.

Dm.—Schröder's "Dichtigkeitsmessungen." Heidelberg, 1873.

Erd. J.—Erdmann's Journal.

F. W. C.—This abbreviation indicates the work of students under the direction of F. W. Clarke.

G. C. I.—Gazzetta Chimica Italiana.

Geol. Mag.—Geological Magazine.

G. F. F.—Geologiska Föreningar Förhandlingar.

Gilb. Ann.—Gilbert's Annalen.

Gm. H.—Gmelin's Handbook of Chemistry. Cavendish Society edition.

In. Diss. or Inaug. Diss.—Inaugural or Doctoral Dissertation. Always prefixed by the name of the university from which the dissertation was published.

J.—Jahresbericht über die Fortschritte der Chemie.

J. A. C.—Journal of Analytical Chemistry.

J. C. S.—Journal of the Chemical Society.

J. P. C.—Journal für Praktische Chemie.

J. Ph. Ch.—Journal de Pharmacie et de Chimie.

J. R. C.—Jahresbericht über die Fortschritte * * * der reinen Chemie.

M. C.—Monatshefte für Chemie.

M. C. S.—Memoirs of the Chemical Society.

Mem. Acad. Belg.—Mémoires, Académie Royale de Belgique.

Min. Mag.—Mineralogical Magazine.

M. P. M.—Mineralogische Petrographische Mittheilungen.

M. St. P. Sav. Et.—Mémoires de Savants Etrangers, St. Petersburg Academy.

N. J.—Neues Jahrbuch für Mineralogie, etc.

Nich. J.—Nicholson's Journal.

Öf. Ak. St.—Öfversigt af K. Vet. Akad. Förhandlingar, Stockholm.

P. A.—Poggendorff's Annalen. For convenience, the second series under Wiedemann is covered by the same abbreviation.

P. des C.—Pesanteur Spécifique des Corps. Brisson, Paris, 1787. A German edition by Blumhof appeared at Leipzig in 1795.

P. M.—Philosophical Magazine. London, Edinburgh, and Dublin.

Proc. Amer. Acad.—Proceedings of the American Academy, Boston.

Proc. Amer. Asso.—Proceedings of the American Association for the Advancement of Science.

P. R. S.—Proceedings of the Royal Society. London.

P. R. S. E.—Proceedings of the Royal Society. Edinburgh.

P. R. S. G.—Proceedings of the Royal Society. Glasgow.

P. T.—Philosophical Transactions.

Q. J. S.—Quarterly Journal of Science.

R. T. C.—Recueil des Travaux Chimiques.

Schw. J.—Schweigger's Journal.

S. W. A.—Sitzungsberichte der K. K. Akademie der Wissenschaften. Wien.

Thurston's Report.—Report of the Board on Testing Iron, Steel, and other Metals.
Washington, 1881.

U. N. A.—Upsala, Nova Acta.

V. H. V.—Verhandlungen des naturhistorischen Vereines. Bonn.

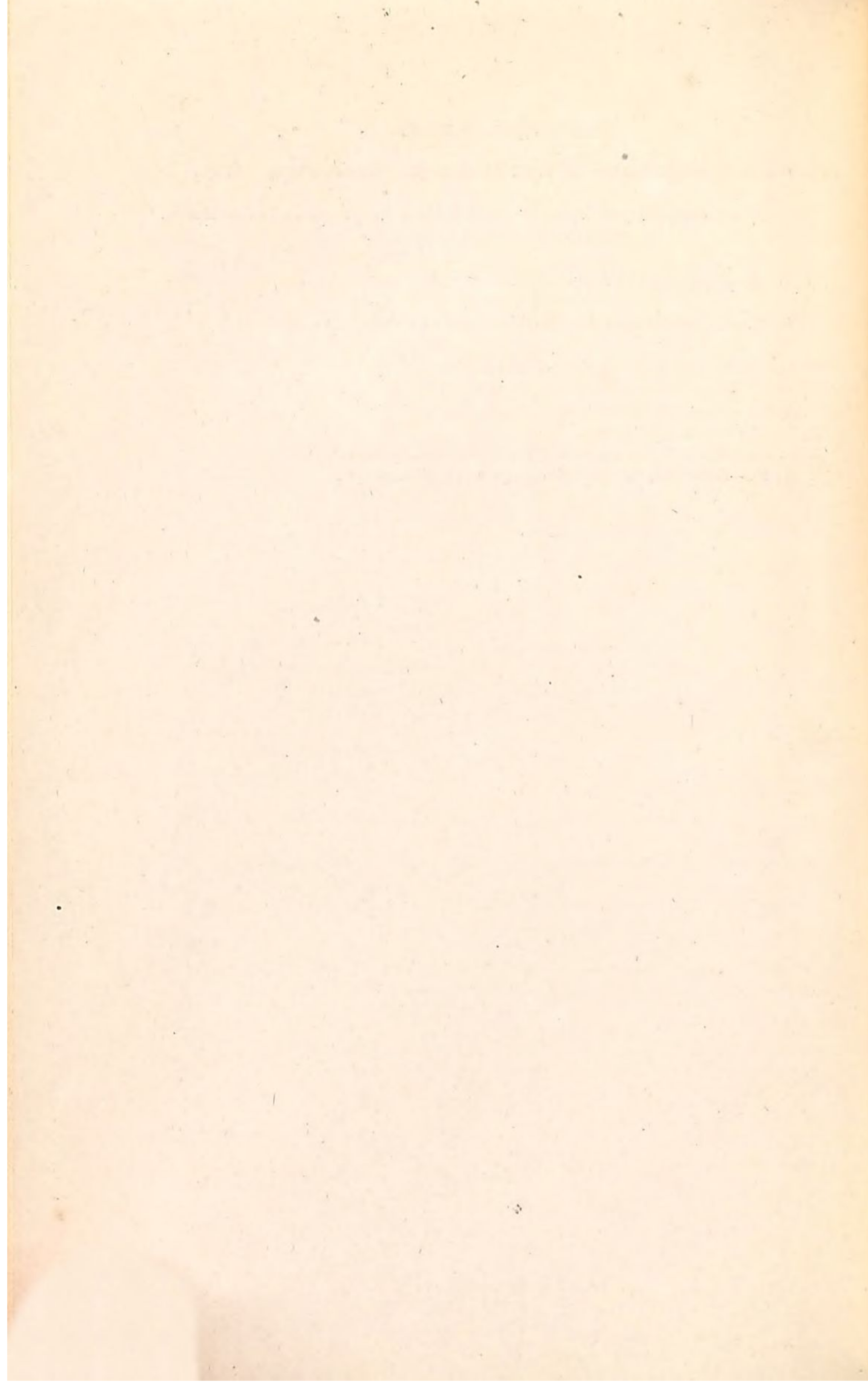
Watts' Dict.—Watts' Dictionary of Chemistry.

Z. A. C.—Zeitschrift für analytische Chemie.

Z. C.—Zeitschrift für Chemie.

Z. G. S.—Zeitschrift der Deutschen Geologischen Gesellschaft.

Z. K. M.—Zeitschrift für Krystallographie und Mineralogie.



A TABLE OF SPECIFIC GRAVITIES

FOR
SOLIDS AND LIQUIDS.

I. THE ELEMENTS.

NAME.	SPECIFIC GRAVITY.	AUTHORITY.
Hydrogen. Liquefied	.025 } 0°	Cailletet and Hautefeuille. C. R. 92, 1086.
" " "	.026 }	
" " "	.032 } -23°	
" " "	.033 }	
" (Occluded by palladium.)	.620 to .623	Dewar. P. M. (4), 47, 334.
Lithium	.578 }	Bunsen. J. 8, 324.
"	.589 }	
Sodium	.9348	Davy. P. T. 1808, 21.
"	.97223, 15°	Gay Lussac and Thénard. See Böttger.
"	.985	Schröder. J. 12, 12.
"	.97	Troost and Hautefeuille. C. R. 78, 970.
"	.9743, 10°	Baumhauer. Ber. 6, 655.
"	.9735, 13°.5 }	
"	.972	Quincke. P. A. 135, 642.
"	.7414, at boiling point	Ramsay. Ber. 13, 2145.
"	.9725, 0°	Hagen. P. A. (2), 19, 436.
"	.9686, 16°.9, m. of 3 }	
"	.9287, 97°.6, fused }	
Potassium	.865, 15°	Gay Lussac and Thénard. Ann. 66, 205.
"	.874	Sementini. See Böttger.
"	.8427, fused	Playfair and Joule. M. C. S. 3, 76.
"	.8750, 13°	Baumhauer. Ber. 6, 655.
"	.8766, 18° }	
"	.8642, 0°	Hagen. P. A. (2), 19, 436.
"	.8298, 62°.1, fused }	
Rubidium	1.52	Bunsen. J. 16, 185.
Cæsium	1.872 }	Setterberg. A. C. P. 211, 215.
"	1.884 } 15°	
"	1.886 }	
Glucinum	2.1	Debray. J. 7, 336. [384.
"	1.64 (Cor. for impurities).	Nilson and Petterson. Ber. 11,
"	1.85, 20°	Humpidge. P. R. S. 39, 1.
Magnesium	2.24, m. of 2	Playfair and Joule. M. C. S. 3, 73.
"	1.7430, 5°	Bunsen. J. 5, 363.
"	1.69 }	Kopp.
"	1.71 }	
"	1.75	Deville and Caron. J. 10, 148.
"	1.77, 0°	H. Wurtz. Am. Chem., Mar. 1876.

NAME.	SPECIFIC GRAVITY.	AUTHORITY.
Zinc	6.861	Brisson. P. des C.
"	6.862	Berzelius. See Böttger.
"	6.9154	Karsten. Schw. J. 65, 394.
"	6.939, m. of 3	Playfair and Joule. M. C. S. 3, 67.
"	7.03 to 7.20	Bolley. J. 8, 387.
"	6.966 } 12°	Schiff. A. C. P. 107, 59.
"	6.975 }	
"	7.21	Daniell.
"	7.146	Wertheim.
"	6.895	Mallet. D. J. 85, 378. [817.
"	7.2	Roberts and Wrightson. Bei. 5,
" Ordinary	7.1812 } 0°	Kalischer. Ber. 14, 2750.
" Crystalline	7.1841 }	
" Fused	6.512, m. of 3	Playfair and Joule. M. C. S. 3, 76.
" "	6.48 } Two methods	Roberts and Wrightson. Ann. (5), 30, 181.
" "	6.55 }	
" "	6.900 }	Quincke. P. A. 135, 642.
" Solid	7.119, 0° }	
" Not pressed	7.142, 16° }	Spring. Ber. 16, 2724.
" Once "	7.153, 16° }	
" Twice "	7.150, 16° }	
Cadmium. Cast	8.6040 }	Stromeyer. Schw. J. 22, 365.
" Hammered	8.6944 }	
"	8.670	Children. See Böttger.
"	8.650	Herapath. P. M. 64 (1824), 321.
"	8.6355	Karsten. Schw. J. 65, 394.
" Wire	8.6689	Baudrimont. J. P. C. 7, 278.
" Pure	8.540 }	Schröder. P. A. 107, 113.
" "	8.566 }	
" "	8.667 }	
" Commercial	8.648	Matthiessen. J. 13, 112.
"	8.655, 11°	
"	8.627, 0° }	Quincke. P. A. 135, 642.
" Fused	8.394 }	
" Not pressed	8.642, 17° }	Spring. Ber. 16, 2724.
" Once "	8.667, 16° }	
" Twice "	8.667, 16° }	
"	8.6681, 0°	Vicentini and Omodei. Bei. 11, 769.
"	8.3665, 318°, solid }	
"	7.989, 318°, molten }	
Mercury. Solid	14.391	Schulze.
" "	14.333, —40° }	Hällström. Gilb. Ann. 20, 403.
" "	15.745 }	
" "	14.485, —60°	Biddle. P. M. 30, 153.
" "	14.0, about	Kupffer and Cavallo.
" "	15.19	Joule. J. 16, 283.
" "	14.1932	Mallet. J. C. S. 34, 275.
" Liquid	13.5681	Brisson. P. des C.
" "	13.575	Fahrenheit. See Böttger.
" "	13.550	Muschenbroek. " "
" "	13.568, 15°.5	Crichton. P. M. 16, 48.
" "	13.613, 10°	Biddle. P. M. 30, 152.
" "	13.6078, 0° }	Hällström. Gilb. Ann. 20, 397.
" "	12.810, boiling }	
" "	13.586	Scholz. See Böttger.
" "	13.567	Kummer. " "
" "	13.5886, 4° }	Kupffer. Ann. (2), 40, 285.
" "	13.535, 26° }	

NAME.	SPECIFIC GRAVITY.	AUTHORITY.
Mercury. Liquid	13.588597	Biot and Arago. Biot's "Traité de Physique."
" "	13.5592	Karsten. Schw. J. 65, 394.
" "	13.582, 5°—10°	Regnault. P. A. 62, 50.
" "	13.570, 10°—15°	
" "	13.558, 15°—20°	
" "	13.59599	
" "	13.59602	Regnault. Ann. (3), 14, 236.
" "	13.59578	
" "	13.595, 0°	Kopp. J. 1, 445.
" "	13.573, 15°	Holzmann. J. 13, 112.
" "	13.603, 12°	Schiff.
" "	13.584, 16°.6	Stewart. P. T. 1863, 430.
" "	13.5953, 0°	Volkman. Ber. 14, 1708.
Calcium	1.566	Matthiessen. J. 8, 324.
"	1.584	
"	1.584	
"	1.55	Liés-Bodart and Jobin. J. 11, [126.
"	1.6 to 1.8	Caron. J. 13, 119.
Strontium	2.504	Matthiessen. J. 8, 324.
"	2.580	
"	2.4	Franz. J. P. C. 107, 253.
Barium	4.00, about	Clarke. Gilb. Ann. 55, 28.
"	3.75	Kern. C. N. 31, 243. [52, 63.
Boron.* Cryst.	2.68	Wöhler and Deville. Ann. (3),
" Al B ₁₂	2.5345, 17°.2, m. of 2	Hampe. A. C. P. 183, 85 and 96.
" C ₂ Al ₃ B ₄₈	2.618, 13°	
"	2.611, 20°	
Aluminum. Cast	2.50	Wöhler. J. 7, 327.
" Hammered	2.67	
"	2.583, 4°	Mallet. P. T. 1880, 1025.
"	2.688	Barlow. J. C. S. April, 1883.
" Com'l wire	2.8067	A. P. Corbit. } Communicated W. Bishop. } by R. B. Warder.
" " foil	2.8075	
Gallium	5.935, 23°	Boisbaudran. C. R. 83, 611.
"	5.956, 24°.45	
Indium. In grains	7.110	Reich and Richter. J. 17, 241.
" " "	7.147	
" Laminæ	7.277	
"	7.362, 15°	Winkler. J. 18, 233.
"	7.421, 16°.8	" J. 20, 262.
Lanthanum	6.049	Hillebrand and Norton. P. A. 156, 473.
"	6.163	
Cerium	6.628	Hillebrand and Norton. P. A. 156, 471.
" After fusion	6.728	
Didymium	6.544	Hillebrand and Norton. P. A. 156, 474.
Thallium	11.862	Lamy. J. 15, 180.
" Wire	11.808	De la Rive. J. 16, 248.
" Cast	11.853	
"	11.777	Werther. J. 17, 247.
"	11.900	
" Cast	11.81	Crookes. J. C. S. 1864, 112.
" Pressed	11.88	
" Wire	11.91	

* According to Hampe, the so-called "crystallized boron" is never pure. Its composition is shown in the formulæ given above.

NAME.		SPECIFIC GRAVITY.	AUTHORITY.
Carbon.	Diamond	3.550	Brisson. P. des C.
"	"	3.492	Grailich. Bull. Geol. (2), 13, 542.
"	"	3.520	Mohs. Min. 2, 306.
"	"	3.334	Shepard.
"	"	3.5	Berzelius. A. C. P. 49, 247.
"	"	3.55	Pelouze. Watts' Dict.
"	"	3.5295	Thomson. Min. 1, 46.
"	"	3.53	Schafarik. P. A. 139, 188.
"	"	3.51432, 18°.1	Schrötter. J. 24, 257.
"	"	3.5143	Schrauf. J. 24, 257.
"	"	3.529, 15°	Dufrenoy. J. 24, 258.
"	"	3.51835, m. of 5	Baumhauer. J. C. S. 32, 849.
"	Graphite	2.144	Breithaupt. See Böttger.
"	"	2.229	Kenngott. S. W. A. 13, 469.
"	"	2.273	Regnault. Gm. H.
"	"	2.14	Fuchs. J. P. C. 7, 353.
"	"	2.5	Berzelius. A. C. P. 49, 247.
"	"	2.3285	Karsten. Schw. J. 65, 394.
"	"	2.3162	Poggendorff. P. A. Erganz. Bd. 1848, 363.
"	"	2.25 } Purified	Brodie. J. 12, 68.
"	"	2.26 }	
"	"	2.105 }	Mené.* J. 20, 972.
"	"	2.585 }	
"	"	1.802 }	
"	"	1.844 }	20°, purified -- Löwe. J. 8, 297.
"	Gas carbon	2.35	Graham.
"	"	2.08	Baudrimont.
"	"	1.885	Mené. J. 20, 972.
"	"	1.723, 1.821, 1.982 } - {	From different parts of the retort.
"	"	2.056, 2.556, 18° } - {	Meyn. J. P. C. 26, 482.
"	Sugarcharcoal	1.81 }	
"	"	1.85 }	Monier. Bull. Heb. 14, 13.
"	Charcoal	1.76	Colquhoun.
"	"	2.10 from alcohol	Scholz. See Böttger.
"	"	1.84	Griffith. " " [4, 241.
"	"	1.80	Playfair. Proc. Roy. Soc. Edin.
"	Lamp-black	1.78	Baudrimont.
"	"	1.723 from kerosene }	
"	"	1.780 from coal-tar }	
"	"	naphtha }	
"	"	1.752 from natural gas }	
"	"	1.773 from dead oil }	
Silicon.	Graphitoidal	2.49, 10°	Wöhler. J. 9, 347.
"	"	2.493	Harmening. P. A. 97, 487.
"	"	2.004 }	
"	"	2.194 }	Winkler. J. 17, 208, 209.
"	"	2.197 }	
"	"	2.337	Miller. Proc. Roy. Soc. Edin. 4, 241.
"	Adamantine	2.48, m. of 6	Playfair. Proc. Roy. Soc. Edin. 4, 241.
Germanium		5.469, 20°.4	Winkler. J. P. C. (2), 34, 201.
Zirconium		4.15	Troost. J. 18, 183.
Tin		7.291	Brisson. P. des C.
"		7.295	Muschenbroek. See Böttger.

*The extremes of 29 determinations made on specimens from different localities.

NAME.	SPECIFIC GRAVITY.	AUTHORITY.
Tin	7.2914	Guyton. Nich. J. (1), 1, 110.
"	7.278, 15°.5	Crichton. P. M. 16, 48.
"	7.2911, 17°	Kupffer. Ann. (2), 40, 285.
"	7.285	Herapath. P. M. 64, 321.
"	7.600	
"	7.5565	
"	7.2905	Karsten. Schw. J. 65, 394.
" Wire	7.3395	Baudrimont. J. P. C. 7, 278.
"	7.306, m. of 4	Playfair and Joule. M. C. S. 3, 68.
" Crystallized	7.178	W. H. Miller. P. M. (3), 22, 263.
" Cast	7.293	
"	7.3043	Kopp. A. C. P. 93, 129.
" Cooled slowly	7.373	St. Claire Deville. P. M. (4), 11, 144.
" " quickly	7.239	
"	7.294, 13°	Matthiessen. J. 13, 112.
"	7.291	Mallet. D. J. 85, 378.
" Reduced by H. from Sn Cl ₂ .	{ 7.143 7.166 }	Rammelsberg. Ber. 3, 725.
" Precipitated	7.195	
" Remelted	7.310	[817.
"	7.5	Roberts and Wrightson. Bei. 5,
"	7.267, 0°	Quincke. P. A. 135, 642.
"	7.25	E. Wiedemann. P. A. (2), 20, 232.
" Allotropic	{ 5.809, 5.781, 19° 5.802, 19.5 }	Two lots. Schertel. J. P. C. (2), 19, 322.
" Allotropic converted by heating.	{ 7.280, 15° 7.304, 19° }	
" Allotropic	{ 6.020, 6.002, 19° 5.930, 12°.5 }	
" Allotropic after re-conversion.	7.24 — 7.27	
" Rhombic cryst.	6.52	Trechmann. Z. K. M. 5, 625.
" " "	6.56	
" Ordinary	7.387	Richards. Tr. Amer. Inst. Min. Eng. 11, 235.
" Allotropic	6.175	
" Not pressed	7.286, 10°	Spring. Ber. 16, 2724.
" Once "	7.292, 10°.25	
" Twice "	7.296, 11°	
"	7.3006, 0°	Vicentini and Omodei. Bei. 11, 769.
"	7.1835, 226°, solid	
"	6.988, 226°, molten	
" Fused	6.934, m. of 3.	Playfair and Joule. M. C. S. 3, 75.
"	7.025	Roberts and Wrightson. Ann. (5), 30, 181.
"	6.974	
"	7.144	Quincke. P. A. 135, 642.
Lead	11.445	Muschenbroek. See Böttger.
"	11.352	Brisson. P. des C.
"	11.207	Böckmann. See Böttger.
"	11.1603	Guyton. Ann. 21, 3.
"	11.3303	Kupffer. Ann. (2), 40, 292.
"	11.346, 15°.5	Crichton. P. M. 16, 48.
" Wire	11.3775	Baudrimont. J. P. C. 7, 278.
"	11.352	Herapath. P. M. 64, 321.
"	11.3888	Karsten. Schw. J. 65, 394.
"	11.231, m. of 4	Playfair and Joule. M. C. S. 3, 68.
"	11.370, 0°	Reich. J. P. C. 78, 328.
"	11.3525, 18°	
"	11.395, 4°	Streng. J. 13, 187.

NAME.	SPECIFIC GRAVITY.	AUTHORITY.
Lead	11.361, 70°	Mallet. A. J. S. (3), 8, 212.
" Cooled slowly from fusion.	11.254	St. Claire Deville. P. M. (4), 11, 144.
" Cooled quickly from fusion.	11.363	
" Electrolytic	11.542	
" Electrolytic, fused and cooled quickly.	11.225	
"	11.376, 14°	Holzmann. J. 13, 112.
"	11.344, 4°	Schweitzer. Am. Chem. 7, 174.
"	11.377, 4°	
"	11.335, 0°	Quincke. P. A. 97, 396. [817.
"	11.4	Roberts and Wrightson. Bei. 5,
" Not pressed	11.350, 14°	Spring. Ber. 16, 2724.
" Once "	11.501, 14°	
" Twice "	11.492, 16°	
"	11.359, 0°	Vicentini and Omodei. Bei. 11, 769.
"	11.005, 325°, solid	
"	10.645, 325°, molten	
" Molten	10.509, m. of 3	Playfair and Joule. M. C. S. 3, 74.
"	11.07	Mallet. A. J. S. (3), 8, 212.
"	10.37	Roberts and Wrightson. Ann. (5), 30, 181.
"	10.65	
"	10.952	Quincke. P. A. 135, 642.
Thorium*	7.657	Chydenius. J. 16, 194.
"	7.795	
" Crystallized	11.230	Nilson. Ber. 16, 160. Compare earlier paper, Ber. 15, 2544.
" Non-crystallized	10.968	
Nitrogen. Liquefied	.41 to .44, -23°	Cailletet and Hautefeuille. C. R. 92, 1086.
"	.37 to .38, 0°	
"	.4552, -146°.6	Wroblevsky. C. R. 102, 1010.
"	.5842, -153°.7	
"	.83, -193°	
"	.866, -202°	
"	.859	Olszewski. P. A. (2), 31, 73.
"	.886	
"	.891	
"	.905	
Phosphorus. Common	1.77	Berzelius. See Böttger.
"	2.09	Böttger. Watts' Diet.
"	1.800	Playfair and Joule. M. C. S. 3, 69.
"	1.826	Schrötter. J. 1, 336.
"	1.840	
"	1.8262	Kopp. A. C. P. 93, 129.
"	1.8265	
"	1.823, 35°	Gladstone and Dale. J. 12, 73.
"	1.83676, 0°	Pisati and De Franchis. Ber. 8, 70
"	1.82321, 20°	
"	1.80681, 44°	
" Red	1.964, 10°	Schrötter. J. 1, 336.
"	2.089	Schrötter. J. 3, 262.
"	2.106	
"	2.14	Two preparations. Brodie. J. 5, [330.
"	2.23	
"	2.34, 15°.5	Hittorf. J. 18, 130.

* Nilson's determinations are the only ones having any present value. Chydenius' work has merely historical interest.

NAME.	SPECIFIC GRAVITY.	AUTHORITY.
Phosphorus. Red. Cryst.	2.34, 0°	Troost and Hautefeuille. Ber. 7, 482.
" " -----	2.148, 0°, prep. at 265°	
" " -----	2.19, 0° " 360°	
" " -----	2.293, 0° " 500°	
" Molten	1.744	Playfair and Joule. M. C. S. 3, 76.
" " -----	1.88, 45°	Schrötter. J. 1, 336.
" " -----	1.763	Gladstone and Dale. J. 12, 73.
" " -----	1.74924, 40°	Boils at 278°.3. Pisati and De Franchis. Ber. 8, 70.
" " -----	1.6949, 100°	
" " -----	1.6027, 200°	
" " -----	1.52867, 280°	
" " -----	1.4850, at boiling point	Ramsay and Masson. Ber 13, 2147.
" " -----	1.833	Quincke. P. A. 135, 642.
Vanadium	5.5, 15°	Roscoe. P. T. 1869, 679.
" -----	5.866	Setterberg. Of. Ak. St. 1882, 10, 13.
" -----	5.875	
Arsenic	5.7633	Brisson. P. des C.
" -----	5.766	Mohs. See Böttger.
" -----	5.7633	Stromeyer. " "
" -----	5.884	Turner.
" -----	5.700	Guibourt. B. J. 7, 128.
" -----	5.959	
" -----	5.672	Herapath. P. M. 64, 321.
" -----	5.6281	Karsten. Schw. J. 65, 394.
" Native	5.736	Breithaupt. J. P. C. 16, 475.
" " -----	5.722	Breithaupt. J. P. C. 11, 151.
" " -----	5.734	
" -----	5.230	Playfair and Joule. M. C. S. 3, 72.
" -----	5.395, 12°.5	Ludwig. J. 12, 183.
" -----	5.726	Bettendorff. J. 20, 253.
" -----	5.728	
" After fusion	5.709, 19°	Mallet. B. S. C. 18, 438.
" Allotropic	4.710	Bettendorff. J. 20, 253.
" " -----	4.716	
" " -----	4.6 to 4.7	Engel. C. R. 96, 498.
" Compressed	4.91	Spring. Ber. 16, 326.
" Allotropic	3.7002 to 3.7100, 15°	Rückoldt. A. C. P. 240, 215.
Antimony	6.702	Brisson. P. des C.
" -----	6.712	Hatchett. See Böttger.
" -----	6.733	Böckmann. " "
" -----	6.852	Muschenbroek. " "
" -----	6.860	Bergmann. " "
" -----	6.646	Mohs. " "
" -----	6.6101	Breithaupt. " "
" -----	6.7006	Karsten. Schw. J. 65, 394.
" -----	6.715	Marchand and Scheerer. J. P. C.
" -----	6.705, 3°.75, m. of 3	[27, 193.]
" -----	6.6987	Dexter. P. A. 100, 567.
" -----	6.7102	
" -----	6.713, 14°	Matthiessen. J. 13, 112.
" -----	6.697	Schröder. P. A. 107, 113.
" -----	6.7022, m. of 6	Cooke. Proc. Amer. Acad. 1877
" -----	6.6957	
" -----	6.7070	Quincke. P. A. 135, 642.
" -----	6.620, 0°	
" Not pressed	6.675, 15°.5	Spring. Ber. 16, 2724.
" Once " -----	6.733, 15°	
" Twice " -----	6.740, 16°	

NAME.	SPECIFIC GRAVITY.	AUTHORITY.
Antimony. Amorphous	5.74 }	Gore. J. 13, 172.
" "	5.83 }	
" Molten	6.646 }	Playfair and Joule. M. C. S. 3, 77.
" "	6.529 }	
" "	6.528	Quincke. P. A. 135, 642.
Bismuth	9.67	Muschenbroek. See Böttger.
"	9.822	Brisson. P. des C.
"	9.800	Leonhard. See Böttger.
"	9.8827	Thénard. " "
"	9.8827	Berzelius.
"	9.831	Herapath. P. M. 64, 321.
"	9.6542	Karsten. Schw. J. 65, 394.
" Pure	9.799, 19° }	Marchand and Scheerer. J. P. C. 27, 193.
" Commercial	9.783 }	
" Compressed	9.556 }	C. St. Claire Deville. J. 8, 15.
" Crystallized	9.935 }	
" Quickly cooled from fusion.	9.677 }	Holzmann. J. 13, 112.
"	9.823, 12°	
"	9.713, m. of 3	Schröder. P. A. 107, 113.
"	9.82	Roberts and Wrightson. Bei. 5, 817.
"	9.819, 0°	Quincke. P. A. 135, 642.
" Not pressed	9.804, 13°.5 }	Spring. Ber. 16, 2724.
" Once "	9.856, 15° }	
" Twice "	9.863, 15° }	Vicentini and Omodei. Bei. 11, 769.
"	9.787, 0°.	
"	9.673, 270°.9 s. }	Playfair and Joule. M. C. S. 3, 75.
"	10.004, 270°.9 l. }	
" Molten	9.798	Roberts and Wrightson. By two methods. Nature, 22, 448.
" "	10.039 }	
" "	10.055 }	Quincke. P. A. 135, 642.
" "	9.709	Marignac. J. 21, 214.
Columbium. (Niobium)	6.0 to 7.37 *	Roscoe. C. N. 37, 26.
"	7.06, 15°.5	Rose. J. 9, 366.
Tantalum	10.08 to 10.78	By two methods. Pictet. Ann. (5), 13, 193.
Oxygen. Liquified	.9787	Pictet, recalculated by Offret. Ann. (5), 19, 271.
" "	.9883, m. of 4 }	Cailletet and Hautefeuille. C. R. 92, 1086.
" "	.8402 }	
" "	.8655 }	Wroblevsky. C. R. 97, 166.
" "	.58, .65, .70, 0° }	
" "	.84, .88, .89, —23° }	Wroblevsky. P. A. (2), 20, 867.
" "	.895	
" "	.899 —130°, m. of 12	Olszewski. Ber. 17, ref. 198.
" "	.7555 —129°.57 }	
" "	.806 —134°.43 }	Olszewski. P. A. (2), 31, 73.
" "	.877 —139°.3 }	
" "	{ 1.110 } —181°.4, boil- }	Wroblevsky. C. R. 102, 1010.
" "	{ to } ing point. }	
" "	1.137 }	Brisson. P. des C.
" "	.6, —118° }	
" "	1.24 —200° }	
Sulphur. Roll	1.9907	

* Probably the hydride, Cb H.

NAME.	SPECIFIC GRAVITY.	AUTHORITY.
Sulphur. Roll	1.868	Böckmann.
" Flowers	2.086	Gehler.
" Cryst.	1.898	Fontenelle.
" From solution	1.927	Bischof.
" Cryst.	1.989	Breithaupt.
" Roll	1.9777	Quoted by Marchand and Scheerer. J. P. C. 24, 129.
" "	2.0000	
" Prismatic	2.072	Thomson.
" Native	2.086	Mohs.
" Soft	2.027	Dumas and Roget.
" Native	2.05001	Osann.
" From fusion	1.9889	Karsten. Schw. J. 65, 394.
" Prismatic	1.982	
" Native	2.066	Marchand and Scheerer. J. P. C. 24, 129.
" From solution	2.0518	
" Soft	1.957	Kopp. A. C. P. 93, 129.
" Native	2.069	
" Soft	1.919	C. St. Claire Deville. J. 1, 365.
" "	1.928	
" Prismatic	1.958	Playfair and Joule. M. C. S. 3, 79.
" Native	2.070	
" From solution	2.063	Brame. C. R. 35, 748.
" Crystallized	2.010	
" Flowers	1.913	Müller. J. 19, 118.
" Waxy	1.921	
" Native, cryst.	2.0757	Pisati. Ber. 7, 361.
" Soft	1.87 to 1.9319	
" Amorphous.	1.87	Spring. Bei. 5, 853.
" Yellow.	1.91 — 1.93	
" Amorphous.	1.91 — 1.93	Spring. Bei. 5, 854. From Bul- letin de l'Acad. Roy. de Belg. (3), 2, 83-110, 1881.
" Brown.	1.91 — 1.93	
" Crystallized	2.0748, 0°	Maquenne. Ber. 17, ref. 199. Schrauf. Z. K. M. 12, 325.
" Insoluble	1.9556, 0°	
" "	1.9496, 20°	Playfair and Joule. M. C. S. 3, 76.
" "	1.9041, 40°	
" "	1.9438, 60°	At the boiling point, 446°. Ram- say. J. C. S. 35, 471.
" "	1.9559, 80°	
" "	1.9643, 100°	Berzelius. See Böttger.
" Cryst. from C S ₂ .	2.0477, 0°	
" " "	2.0370, 20°	Extremes of 5 } determinat'ns }
" " "	2.0283, 40°	
" " "	2.0182, 60°	Extremes } {
" " "	2.0014, 80°	
" " "	1.9756, 100°	Extremes } {
" From Sicily	2.0788, 0°	
" " "	2.0688, 20°	Extremes } {
" " "	2.0583, 40°	
" " "	2.0479, 60°	Extremes } {
" " "	2.0373, 80°	
" " "	2.0220, 100°	Extremes } {
" Lamellæ	2.041 — 2.049	
" Sicilian	2.06665, 16°.75	Extremes of 5 } determinat'ns }
" Molten	1.801	
" " "	1.815	Extremes } {
" " "	1.4794, m. of 5	
" " "	1.4578	Extremes } {
" " "	1.5130	
Selenium	4.3 to 4.32	Berzelius. See Böttger.

NAME.	SPECIFIC GRAVITY.	AUTHORITY.
Selenium	4.310	Boullay. See Böttger.
"	4.808, 15°	Hittorf. J. 4, 319.
" Cryst. fr. fusion	4.805	Schaffgotsch. J. 6, 329.
" " "	4.796	
" Amorphous	4.276	
" " "	4.286	
" Precip. Red	4.245	
" " "	4.275	Schaffgotsch. J. 6, 329.
" Precip. after { heat'g to 50°.	4.250	
" " "	4.297	
" Crystallized	4.460	Mitscherlich. J. 8, 314.
" " "	4.509	
" " "	4.700	
" " from so- lution.	4.760	
" " "	4.788	Neumann. P. A. 126, 138.
" Crystallized	4.406, 21°	
" Black	4.80	Rathke. J. P. C. 108, 235.
" " "	4.81	
" Precip. Red	4.26	
" " "	4.28	Rammelsberg. P. A. 152, 154.
" Gray	4.495	
" " Granular	4.514	
" Laminated, { from alkaline	4.77	
" " "	4.79	
" selenides.	4.86	
" Cryst. from CS ₂	4.418	
" " " "	4.54	
" " " "	4.59	
" Amorphous	4.27	
" " "	4.34	Spring. Bei. 5, 854. From Bull. de l'Acad. Roy. de Belg. (3), 2, 88-110, 1881.
" Melted	4.29	
" " "	4.36	
" Compressed	4.7994, 0°	
" " "	4.7869, 20°	
" " "	4.7699, 40°	
" " "	4.7526, 60°	
" " "	4.7351, 80°	
" " "	4.7167, 100°	
" Uncompressed	4.7312, 0°	
" " "	4.7176, 20°	Quincke. P. A. 135, 642. Klaproth. Ann. 25, 273. Magnus. See Böttger.
" " "	4.7010, 40°	
" " "	4.6826, 60°	
" " "	4.6623, 80°	
" " "	4.6396, 100°	
" Fused	4.2	Berzelius. P. A. 28, 392. Löwe. J. P. C. 60, 163.
Tellurium	6.115	
"	6.1379	
"	6.2445, m. of 5	Reichenstein. See Böttger.
"	6.180	
"	6.343	Spring. Bei. 5, 854. From Bull. de l'Acad. Roy. de Belg. (3), 2, 88-110, 1881.
" Compressed	6.2549, 0°	
" " "	6.2419, 20°	
" " "	6.2294, 40°	
" " "	6.2170, 60°	
" " "	6.2030, 80°	
" " "	6.1891, 100°	

NAME.	SPECIFIC GRAVITY.	AUTHORITY.
Tellurium. Uncompressed.	6.2322, 0°	Spring. Bei. 5, 854. From Bull. de l'Acad. Roy. de Belg. (3), 2, 88-110, 1881.
" "	6.2194, 20°	
" "	6.2052, 40°	
" "	6.1500, 60°	
" "	6.1366, 80°	
" "	6.1640, 100°	
"	6.204	Klein and Morel. Ann. (6), 5, 61.
"	6.215	
Chromium	7.3	Bunsen. Watts' Dict.
" Crystallized	6.81, 25°	Wöhler. J. 12, 169.
" Red. by K Cy	6.20	Loughlin. J. 21, 220.
Molybdenum	8.490	Bucholz. Nich. J. 20, 121.
"	8.615	
"	8.636	
"	8.60	Debray. J. 11, 157.
" Red. by K Cy	8.56	Loughlin. J. 21, 220.
Tungsten	17.60	D'Elhuyart. See Böttger.
"	17.22	Allan and Aiken. " "
"	17.4	Bucholz. Schw. J. 3, 1.
"	16.54	Uslar. J. 8, 372.
"	17.50	
"	18.26	
" Reduced by H	17.1 to 17.3	Bernoulli. J. 13, 152.
" " C	17.9 to 18.12	
"	16.6	Prepared by three methods. Zett-
"	17.2	
"	18.447, 17°	
"	19.261, 12°	Roscoe. C. N. 25, 61.
"	18.25	Waddell. A. C. J. 8, 287.
"	18.77	
Uranium	18.40	Peligot. J. 9, 380.
"	18.33	Peligot. A. C. P. 149, 128.
"	18.685, 4°, m. of 3	Zimmermann. Ber. 15, 851.
Chlorine. Liquefied	1.33, 15°.5	Faraday. P. T. 1823, 164.
Bromine	2.966	Balard. Ann. (2), 32, 337.
"	2.98	Löwig. See Böttger.
"	2.99	
"	3.18718, 0°	Pierre. Ann. (3), 20, 5.
"	3.18828, 0°	Thorpe. J. C. S. 37, 172.
"	2.98218, 59°.27	
"	2.9483, m. of 4	Taken at the boiling point. Ram-
"	2.9471	
"	2.9503	
"	3.1875, 0°	
Iodine	4.948	Van der Plaats. J. C. S. 50, 849.
" Solid	4.9173, 40°.3	Gay Lussac. Ann. 91, 5.
" "	4.886, 60°	
" "	4.857, 79°.6	Billet. J. 8, 46.
" "	4.841, 89°.8	
" "	4.825, 107°	
" Molten	4.004, 107°	
" "	3.988, 111°.7	
" "	3.944, 124°.3	
" "	3.918, 133°.5	
" "	3.866, 151°	
" "	3.796, 170°	[4, 241.
" Solid	5.030	
		Playfair. Proc. Roy. Soc. Edin.

NAME.	SPECIFIC GRAVITY.	AUTHORITY.
Manganese -----	6.861 } -----	Bergmann.
" -----	7.10 } -----	
" -----	8.03 -----	Bachmann. See Böttger.
" -----	8.013 -----	John. P. M. 2, 176.
" -----	7.138 } -----	
" -----	7.206 } -----	Brunner. J. 10, 202.
Iron -----	7.788 -----	Brisson. P. des C.
" Wrought -----	7.790 -----	Karsten. Schw. J. 65, 394.
" Wire in several dif- {	7.6305 } -----	
ferent conditions. {	7.6000 } -----	
	7.7169 } -----	Baudrimont. J. P. C. 7, 268.
	7.7312 } -----	
" Hammered -----	7.7433 } -----	
" Bar -----	7.4839 -----	Bröling. See Percy's Metallurgy.
" -----	7.8707 } -----	
" -----	7.865 } -----	Berzelius. " " "
" Reduced by zinc {	7.50 } -----	
vapor. {	7.84 } -----	Poumaréde. J. 2, 281.
" Reduced by C. -----	7.130 -----	Playfair and Joule. M. C. S. 3, 72.
" Electrolytic -----	8.1393, 15°.5 -----	Smith. See Percy's Metallurgy.
" Fused in H., not	7.880, 16° } -----	
forged. {		
" Fused in H., forged	7.868, 16° } -----	
" Fused in H., wire	7.847, 16° } -----	Caron. C. R. 70, 1263.
" Fused in crucible	7.833, 16° } -----	
" Good commercial	7.852, 16° } -----	
" Reduced by H. -----	7.998 } 10° -----	Schiff.
" " -----	8.007 } -----	
" " -----	6.03 -----	Stahlschmidt. J. 18, 255.
" Molten -----	6.88 -----	Roberts and Wrightson. Bei. 5, 817. [6, 145.
" Molten steel -----	8.05 -----	Petruschewsky and Alexejeff. Bei.
Nickel -----	7.807 -----	Brisson. P. des C.
" -----	8.279, cast } -----	
" -----	8.666, forged } -----	Richter. Ann. 53, 164.
" Cast -----	8.380 } 12°.5 -----	
" Forged -----	8.820 } -----	Tupputi. Ann. 78, 133.
" -----	8.932, 12°.5 -----	Tourte. Ann. 71, 103.
" -----	8.477 } -----	
" -----	8.713 } -----	Baumgartner. See Böttger.
" -----	8.637 -----	Brunner. " "
" -----	9.000 -----	Bergmann. " "
" Reduced by H. -----	7.861 } -----	
" " -----	7.803 } -----	Playfair and Joule. M. C. S. 3, 71.
" Wire -----	8.88, 4° -----	Arndtsen.
" Reduced by H. -----	8.975 } -----	
" " -----	9.261 } -----	Rammelsberg. J. 2, 282.
" -----	8.900 -----	Schröder. P. A. 107, 113.
Cobalt -----	8.710 -----	Lampadius. Erd. J. (1), 5, 390.
" -----	8.485 -----	Brunner. See Böttger.
" -----	9.152 -----	Gehler. " "
" -----	8.500 -----	Mitscherlich. " "
" -----	8.5131 -----	Berzelius. " "
" -----	8.5384 -----	Haüy and Tassaert. See Böttger.
" -----	8.558 -----	T. H. Henry. M. C. S. 3, 59.
" Reduced by H. -----	7.718 } -----	
" " -----	8.260 } -----	Playfair and Joule. M. C. S. 3, 71.
" " -----	8.957, m. of 5 -----	Rammelsberg. J. 2, 282.

NAME.	SPECIFIC GRAVITY.	AUTHORITY.
Copper	8.895	Hatchett. P. T. 1803, 88.
" Rolled	8.878	Brisson. P. des C.
" Cast	8.788	
" "	8.83	Berzelius. See Böttger.
" Drawn	8.9463	
" Hammered	8.9587	
"	8.78	Kupffer. Ann. (2), 25, 356.
"	8.900	Herapath. P. M. 64, 321.
"	8.721	Karsten. Schw. J. 65. 394.
" Wire in several different conditions.	8.6225	Baudrimont. J. P. C. 7, 287.
	8.3912	
	8.7059	
	8.8787	
" Hammered	8.8893	Marchand and Scheerer. J. P. C. [27, 193.
" Cast, slowly cooled	8.4525	
" Crystallized	8.940	
" Cast	8.921	
" Various sorts of wire.	8.939	Mallet. D. J. 85, 378.
	8.949	
	8.930	
	8.951	
" Sheet	8.952	Playfair and Joule. M. C. S. 3, 57.
" Pressed	8.931	
" Electrolytic	8.914	
"	8.667	
" Finely divided	8.428	Playfair and Joule. J. C. S. 1, 121.
" "	8.483	
" "	8.360	
" Electrolytic	8.884	
" "	8.941	Schiff.
" "	8.934	
" Finely divided	8.367	
" "	8.41613	
" Hammered	8.855	O'Neill. Memoirs Manchester Philosophical Society, (3), 1, 243.
" "	8.878	
" Rolled	8.879	
" "	8.898	
" Annealed	8.884	Whitney. J. 12, 769.
" "	8.896	
"	8.902, 12°	
" Native	8.838	
"	8.952	Schröder. P. A. 107, 113.
"	8.958	
" Electrolytic, cast	8.916	Dick. P. M. (4), 11, 409.
" " "	8.958	
" " wire	8.853	
" " "	8.733	
" Plate	8.902, 0°	Quincke. P. A. 97, 396.
"	8.945, 0° (in vacuo)	Hampe. C. C. 6, 379. [817.
"	8.9565, 17°	
"	8.8	Roberts and Wrightson. Bei. 5, 817.
" Allotropic	8.0 to 8.2	
" Molten	7.272	Playfair and Joule. M. C. S. 3, 77.
"	8.217	Roberts and Wrightson. Bei. 5, 817.
Silver	10.472	Brisson. P. des C.
"	10,362, 10°	Biddle. P. M. 30, 152.

NAME.	SPECIFIC GRAVITY.	AUTHORITY.
Silver	10.43 }	Lengsdorf.
"	10.47 }	
"	10.4282	Karsten. Schw. J. 65, 394.
" Cast, slowly cooled	10.1053 }	
" Same mass, rolled	10.5513 }	
" Hammered	10.4476 }	
" Brittle	9.8463 }	Baudrimont. J. P. C. 7, 287.
" Granulated	9.6323 }	
" Cryst. in laminae	9.5538 }	
" Wire	10.4913 }	
"	10.434	Breithaupt. J. P. C. 11, 151.
"	10.482	Karmarsch. J. P. C. 43, 193.
"	10.522 }	
"	10.537 }	Playfair and Joule. M. C. S. 3, 66.
" Cast	10.505	
" Pressed	10.5665	
" Precip. powdery	10.5532	
" " "	10.6191	G. Rose. P. A. 73, 1.
"	10.5287, m. of 13	
"	10.5237, m. of 4	
"	10.5283, m. of 8	
"	10.468, 13°	Holzmann. J. 13, 112.
"	10.575	Christomanos. J. 21, 272.
" After heating in vacuo.	10.512	Dumas. C. N. 37, 82.
"	10.412, 4°	Zimmermann. Ber. 15, 850.
"	10.57	Roberts. C. N. 31, 143.
"	10.621, 0°	Quincke. P. A. 135, 642.
" Molten	9.131 }	Playfair and Joule. M. C. S. 3, 78.
"	9.281 }	
"	9.4612	Roberts. C. N. 31, 143.
"	9.51 }	Roberts and Wrightson. Ann.
"	9.40 }	(5), 30, 181.
"	10.002	Quincke. P. A. 135, 642.
Gold	19.258	Brisson. P. des C.
" Hammered	19.207	Elliot. Quoted by Rose.
"	19.3 to 19.4	Lewis. " " "
" Pressed	19.3336, 17° 5	
" Ppt. by oxalic acid	19.2981, 17° 5	
" Cast and pressed, 16 samples differently prepared.	19.2881, 17° 5, m. of 37	G. Rose. P. A. 73, 1.
"	19.2689, 17° 5	
"	19.3296, 17° 5	Ex- tremes.
" Ppt. by oxalic acid	19.4941	G. Rose. P. A. 75, 403.
"	19.265, 13°	Holzmann. J. 13, 112.
" Before rolling	19.2945 }	Roberts and Rigg. J. C. S. (2),
" Once rolled	19.2982 }	12, 203.
" Molten	17.099	Quincke. P. A. 135, 642.
Ruthenium	11.0 }	
"	11.4 }	Deville and Debray. J. 12, 234.
"	12.261, 0°	Deville and Debray. C. R. 83, 928.
Rhodium	11.0+	Wollaston. P. T. 1804, 426.
"	11.2	Cloud. Schw. J. 43, 316.
"	11.0	Hare. A. J. S. (2), 2, 365.
"	12.1	Deville and Debray. J. 12, 240.
Palladium	11.3 }	
"	11.8 }	Wollaston. See Böttger.
"	12.148	Lowry. " "
"	11.852	Lampadius. Watts' Dict.

NAME.	SPECIFIC GRAVITY.	AUTHORITY.
Palladium	11.8	Vauquelin. Ann. 88, 167.
"	11.041, 18°	Cloud. Schw. J. 1, 362.
"	10.923	Breithaupt. See Böttger.
"	11.628	Benneke and Reinecker. See Böttger.
"	11.30 }	Cock. M. C. S. 1, 161.
" Hammered	11.80 }	
"	11.752	Breithaupt. J. P. C. 11, 151.
"	11.4, 22°.5	Deville and Debray. J. 12, 237.
"	12.0	Troost and Hautefeuille. C. R. 78, 970.
"	12.104	Lisenko. Ber. 5, 29.
" Molten	10.8	Quincke. P. A. 135, 642.
Osmium	21.40	Deville and Debray. J. 12, 232.
"	22.477	Deville and Debray. C. R. 82, 1076.
Iridium. Porous globule	18.680	Children. See Böttger.
"	21.78 }	Eckfeldt and Boyé, for Hare. A. J. S. (2), 365.
"	21.83 }	
" Black	18.6088	G. Rose. P. A. 75, 403.
"	21.15	Deville and Debray. J. 12, 242.
"	22.421, 17°.5	Deville and Debray. P. M. (4), 50, 561.
"	22.38	Matthey. C. N. 40, 240.
Platinum	20.85 }	Borda. Quoted by Marchand. J. P. C. 33, 385.
"	20.98 }	
"	21.06 }	
" Cast	19.5 }	Brisson. P. des C.
" Hammered	20.3 }	
" Wire	21.0 }	
"	21.7	Klaproth. Quoted by Marchand.
"	21.061	Sickingen. " " "
"	21.45	Berzelius. " " "
"	21.47 }	Berthier. " " "
"	21.53 }	
" Cast	17.7	Precht. " " "
"	21.3	Faraday. " " "
" Hammered	20.9	E. D. Clarke. " " "
" Spongy	21.47	Thomson. " " "
"	21.343	Scholz. See Böttger.
"	21.359	Meissner. " "
" Wire	21.16 }	Wollaston. P. A. 16, 158.
"	21.40 }	
"	21.53 }	
" Hammered	21.25 }	Liebig. P. A. 17, 101.
" Spongy	17.572 }	
"	15.780 }	
"	16.319 }	Scholz. See Böttger.
" Black	17.894	
"	21.2668 }	Marchand. J. P. C. 33, 385.
"	21.3092 }	
" Hammered	21.31 }	Hare. A. J. S. (2), 2, 365.
"	21.16 }	
"	21.23 }	
" Spongy	16.634 }	Rose. P. A. 75, 403.
" Precip. black	20.9815 }	
"	20.7732 }	
"	22.8926 }	

NAME.	SPECIFIC GRAVITY.	AUTHORITY.
Platinum. Precip. black	22.0345	Rose. P. A. 75, 403.
" Black	26.1418, 15°.7 ? } -----	
" " -----	17.766 } -----	Playfair and Joule. M. C. S. 3, 57.
" Spongy	21.169 } -----	
" " -----	21.243 } -----	Deville and Caron. J. 10, 259.
" -----	21.15 -----	
" -----	21.15 -----	Deville and Debray. J. 12, 240.
" Very pure	21.504, 17°.6 -----	Deville and Debray. P. M. (4), 50, 560.
" Molten	18.915 -----	Quinke. P. A. 135, 642.

II. INORGANIC FLUORIDES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Hydrogen fluoride or hydrofluoric acid, liquid.	H F -----	1.0609 -----	Davy. P. T. 1813, 263.
" " -----	" -----	.9922, 11°	Gore. P. T. 1869, 173.
" " -----	" -----	.9879, 12°.7	
" " -----	" -----	.9885, 13°.6	
" " -----	" -----	1.036, 15°.5 } -----	
Lithium fluoride	Li F -----	2.582 } -----	Schröder. Dm. 1873.
" " -----	" -----	2.608 } -----	
" " -----	" -----	2.612 } -----	Clarke. A. J. S. (3), 13, 292.
" " -----	" -----	2.295, 21°.5 -----	
Sodium fluoride	Na F -----	2.713, m. of 7 } -----	Schröder. Dm. 1873.
" " -----	" -----	2.601 } Ex-	
" " -----	" -----	2.772 } tremes } -----	Clarke. A. J. S. (3), 13, 292.
" " -----	" -----	2.558, 14°.5 -----	
Potassium fluoride	K F -----	2.454, 12° -----	Bödeker. B. D. Z.
" " -----	" -----	2.459 } -----	Schröder. Dm. 1873.
" " -----	" -----	2.476 } -----	
" " -----	" -----	2.507 } -----	Clarke. A. J. S. (3), 13, 292.
" " -----	" -----	2.096, 21°.5 -----	
" " -----	" -----	2.350, m. of 3 -----	Schröder. Ber. 11, 2018.
Rubidium fluoride	Rb F -----	3.202, 16°.5 -----	Clarke. A. J. S. (3), 13, 293.
Ammonium hydrogen fluoride.	Am H F ₂ -----	1.211, 12° -----	Bödeker. B. D. Z.
Silver fluoride	Ag F -----	5.852, 15°.5 -----	Gore. C. N. 21, 28.
Magnesium fluoride	Mg F ₂ -----	2.472 -----	Schröder. Dm. 1873.
" " -----	" -----	2.856, 12° -----	Cossa. Ber. 10, 295.
" " Sellaite.	" -----	2.972 -----	Strüver. Dana's Min., 2d App.
Zinc fluoride	Zn F ₂ -----	4.612, 12° } -----	Clarke. A. J. S. (3), 13, 291.
" " -----	" -----	4.556, 17° } -----	
" " -----	Zn F ₂ . 4 H ₂ O -----	2.567, 10° } -----	
" " -----	" " -----	2.535, 12° } -----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Cadmium fluoride -----	Cd F_2 -----	5.994, 22°, m. of 7.	Kebler. A. C. J. 5, 241.
Calcium fluoride -----	Ca F_2 -----	3.183, m. of 60	Kenngott. J. 6, 853.
" " -----	"-----	3.150 -----	Smith. J. 8, 976.
" " -----	"-----	3.138 -----	Schiff. A. C. P. 108, 21.
" " -----	"-----	3.162 -----	Luca. J. 13, 98.
" " Precip. -----	"-----	3.086 } -----	Schröder. Dm. 1873.
" " Ignited -----	"-----	3.150 } -----	
Strontium fluoride -----	Sr F_2 -----	4.202 } -----	" "
" " -----	"-----	4.236 } -----	
" " -----	"-----	4.210 -----	Schröder. P. A. 6 Erganz. Bd. 622.
Barium fluoride -----	Ba F_2 -----	4.58, 13° -----	Bödeker. B. D. Z.
" " -----	"-----	4.824 } -----	Schröder. Dm. 1873.
" " -----	"-----	4.833 } -----	
Lead fluoride -----	Pb F_2 -----	8.241 -----	" "
Nickel fluoride -----	Ni F_2 -----	2.855, 14° -----	Clarke. A. J. S. (3), 13, 291.
" " -----	$\text{Ni F}_2 \cdot 3 \text{H}_2 \text{O}$ -----	2.014, 19° -----	
Aluminum fluoride -----	Al F_3 -----	3.065 } 12° -----	Bödeker. B. D. Z.
" " -----	"-----	3.13 } -----	
Arsenic trifluoride, 1 -----	As F_3 -----	2.73 -----	Unverdorben. P. A. 7, 316.
" " -----	"-----	2.66 -----	MacIvor. C. N. 30, 169.
" " -----	"-----	2.6659, 0° } -----	Thorpe. J. C. S. 37, 372. [874.
" " -----	"-----	2.4497, 60°.4 } -----	
" " -----	"-----	2.734 -----	Moissan. C. R. 99, Gott and Muir. J. C. S. 53, 137.
Bismuth fluoride -----	Bi F_3 -----	5.32, 20° -----	Dana's Mineralogy. Durnew. J. 4, 820.
" oxyfluoride -----	Bi O F -----	7.5, 20° -----	
Cryolite. Greenland -----	$\text{Na}_3 \text{Al F}_6$ -----	2.9—3.077 -----	Hillebrand and Cross. A. J. S. (3), 26, 271.
" Siberia -----	"-----	2.95 -----	Hermann. J. P. C. 37, 188.
" Colorado -----	"-----	2.972, 24° -----	
Chiolite -----	$\text{Na}_5 \text{Al}_3 \text{F}_{14}$ -----	2.72 -----	Kokscharow. J. 4, 820.
" -----	"-----	2.90 -----	Rammelsberg. P. A. 74, 314.
" -----	"-----	2.842—2.898 -----	Rammelsberg. P. A. 74, 314.
Chodneffite -----	$\text{Na}_2 \text{Al F}_5$ -----	3.003 } -----	Wörth. Dana's Mineralogy.
" -----	"-----	3.077 } -----	
" -----	"-----	2.62—2.77 -----	Hillebrand and Cross. A. J. S. (3), 26, 271.
Pachnolite.* Colorado -----	$\text{Na Ca Al F}_6 \cdot \text{H}_2 \text{O}$ -----	2.965, 17°, m. } of 4.	Scheerer. Dana's Mineralogy.
" " -----	"-----	2.962, 22° -----	
Prosopite. Altenberg -----	$\text{Ca Al}_2 (\text{F. O H})_8$ -----	2.890 } -----	Hillebrand and Cross. A. J. S. (3), 26, 271.
" " -----	"-----	2.898 } -----	
" Colorado -----	"-----	2.880, 23° -----	Brush. A. J. S. (3), 2, 30.
Ralstonite -----	$\text{Na Mg Al}_4 \text{F}_{15} \cdot 3 \text{H}_2 \text{O}$ -----	2.4 -----	

*According to Brandl, pachnolite and thomsenolite are distinct species, but Hillebrand and Cross show them to be identical.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ralstonite -----	$\text{Na Mg Al}_4\text{F}_{15} \cdot 3\text{H}_2\text{O}$	2.62 -----	Nordenskiöld. Dana's Min., 3d App.
" -----	$(\text{MgNa}_2)\text{Al}_3(\text{F.OH})_{11} \cdot 2\text{H}_2\text{O}$	2.560 -----	Penfield and Harper. A. J. S. (3), 32, 381.
Fluocerite -----	Ce F_3 , ? -----	4.7 -----	Berzelius. Dana's Mineralogy.
Tysonite -----	$4\text{Ce F}_3 \cdot 3\text{La F}_3$ -----	6.13, in mean -----	Allen and Comstock. A. J. S. (3), 19, 391.
Yttrocerite -----	----- ? -----	3.447 -----	Berzelius. Dana's Mineralogy.
Potassium borofluoride -----	K B F_4 -----	2.5 } -----	Stolba. B. S. C. 18, 309.
" " -----	" -----	2.6 } -----	
Lithium silicofluoride -----	$\text{Li}_2\text{Si F}_6 \cdot 2\text{H}_2\text{O}$ -----	2.33 -----	Stolba. J. 17, 213.
" " -----	" -----	2.244 -----	Topsoë. C. C. 4, 76.
Sodium silicofluoride -----	$\text{Na}_2\text{Si F}_6$ -----	2.7547, 17°.5 -----	Stolba. J. P. C. 97, 503.
" " -----	" -----	2.680, m. of 4 } -----	Schröder. Dm. 1873.
" " -----	" -----	2.671 } Ex- -----	
" " -----	" -----	2.691 } tremes -----	
Potassium silicofluoride -----	$\text{K}_2\text{Si F}_6$ -----	2.6655 } -----	{ Stolba. J. P. C. 97, 503.
" " -----	" -----	2.6649 } 17°.5 -----	
" " -----	" -----	2.655 } -----	Schröder. Dm. 1873.
" " -----	" -----	2.698 } -----	
" " -----	" -----	2.704 } -----	
Rubidium silicofluoride -----	$\text{Rb}_2\text{Si F}_6$ -----	3.3383, 20° -----	Stolba. J. 20, 186.
Cæsium silicofluoride -----	$\text{Cs}_2\text{Si F}_6$ -----	3.3756, 17° -----	Preis. J. 21, 195.
Ammonium silicofluoride -----	$\text{Am}_2\text{Si F}_6$ -----	1.970 -----	Topsoë. C. C. 4, 76.
" " -----	" -----	2.056, m. of 5 } -----	Schröder. Dm. 1873.
" " -----	" -----	2.035 } Ex- -----	
" " -----	" -----	2.071 } tremes -----	
Calcium silicofluoride -----	Ca Si F_6 , ? -----	2.649 } -----	Stolba. J. 33, 239.
" " -----	" -----	2.675 } 17°.5 -----	
" " -----	$\text{Ca Si F}_6 \cdot 2\text{H}_2\text{O}$ -----	2.254 -----	Topsoë. C. C. 4, 76.
Strontium silicofluoride -----	$\text{Sr Si F}_6 \cdot 2\text{H}_2\text{O}$ -----	2.988 } -----	Stolba. J. 34, 285.
" " -----	" " -----	2.999 } -----	
Barium silicofluoride -----	Ba Si F_6 -----	4.2794, 21° -----	Stolba. J. 18, 170.
" " -----	" -----	4.2380, 22° -----	Schweitzer. Univ. of Missouri, special pub. 1876.
Magnesium silicofluoride -----	$\text{Mg Si F}_6 \cdot 6\text{H}_2\text{O}$ -----	1.761 } -----	Topsoë. C. C. 4, 76.
Zinc silicofluoride -----	$\text{Zn Si F}_6 \cdot 6\text{H}_2\text{O}$ -----	2.104 } -----	
" " -----	" " -----	2.121 } -----	{ Stolba. J. R. C. 5, 72.
" " -----	" " -----	2.1448 } 17°.5 -----	
Manganese silicofluoride -----	$\text{Mn Si F}_6 \cdot 6\text{H}_2\text{O}$ -----	1.858 -----	Topsoë. C. C. 4, 76.
Iron silicofluoride* -----	$\text{Fe Si F}_6 \cdot 6\text{H}_2\text{O}$ -----	1.96115, 17°.5 -----	Stolba. B. S. C. 26, 155.
Nickel silicofluoride -----	$\text{Ni Si F}_6 \cdot 6\text{H}_2\text{O}$ -----	2.109 } -----	Topsoë. C. C. 4, 76.
Cobalt silicofluoride* -----	$\text{Co Si F}_6 \cdot 6\text{H}_2\text{O}$ -----	2.067 } -----	
" " -----	" " -----	2.1211 } -----	{ Stolba. B. S. C. 26, 155.
" " -----	" " -----	2.1135 } 19° -----	
Copper silicofluoride* -----	$\text{Cu Si F}_6 \cdot 4\text{H}_2\text{O}$ -----	2.535 -----	Topsoë. C. C. 4, 76.
" " -----	$\text{Cu Si F}_6 \cdot 6\text{H}_2\text{O}$ -----	2.1576, 19° -----	Stolba. J. 20, 299.
" " -----	" " -----	2.207 -----	Topsoë. C. C. 4, 76.
" " -----	" " -----	2.182 -----	Topsoë and Christiansen.

*According to Stolba, these salts contain $6\frac{1}{2}$ molecules of water.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Potassium titanofluoride	$K_2 Ti F_6$	2.0797, 12°	Bödeker. B. D. Z.
" "	$K_2 Ti F_6 \cdot H_2 O$	2.992	Topsoë. C. C. 4, 76.
Copper titanofluoride	$Cu Ti F_6 \cdot 4 H_2 O$	2.529	" "
Potassium zircofluoride	$K_2 Zr F_6$	3.582	" "
Zinc zircofluoride	$Zn Zr F_6 \cdot 6 H_2 O$	2.255	" "
Nickel zircofluoride	$Ni Zr F_6 \cdot 6 H_2 O$	2.227	" "
Potassium stannifluoride	$K_2 Sn F_6 \cdot H_2 O$	3.053	" "
Ammonium stannifluoride	$Am_2 Sn F_6$	2.887	" "
Manganese stannifluoride	$Mn Sn F_6 \cdot 6 H_2 O$	2.307	" "
Cobalt stannifluoride	$Co Sn F_6 \cdot 6 H_2 O$	2.604	" "
Potassium columboxyfluoride.	$K_2 Cb O F_5 \cdot H_2 O$	2.813	" "
Copper columboxyfluoride	$Cu Cb O F_5 \cdot 4 H_2 O$	2.750	" "
Potassium tantalofluoride.	$K_2 Ta F_7$	4.056	" "
Potassium uranoxxyfluoride	$3 K F \cdot U O_2 F_2$	4.263, 20°	Baker. J. C. S. 35, 760.
" "	$5 K F \cdot 2 U O_2 F_2$	4.379, 20°	" "
" "	$3 K F \cdot 2 U O_2 F_2 \cdot 2 H_2 O$	4.108, 20°	" "
Ammonium uranoxxyfluoride.	$3 Am F \cdot U O_2 F_2$	3.186, 20°	" "

III. INORGANIC CHLORIDES.

1st. Simple Chlorides.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Hydrogen chloride or hydrochloric acid, liquef'd	$H Cl$	.908, 0°	Ansdell. C. N. 41, 76. Critical temperature, 51°.25.
" "	"	.873, 7°.5	
" "	"	.854, 11°.7	
" "	"	.835, 15°.8	
" "	"	.808, 22°.7	
" "	"	.748, 33°	
" "	"	.678, 41°.6	
" "	"	.619, 47°.8	
Lithium chloride	$Li Cl$	1.998	Kremers. J. 10, 67.
" "	"	2.074	Schröder. P. A. 107, 113.
" " Fused	"	1.515	Quincke. P. A. 128, 141.
Sodium chloride	$Na Cl$	2.2001	Hassenfratz. Ann. 28, 3.
" "	"	2.15	Leslie. See Böttger.
" "	"	2.26	Mohs.
" "	"	2.078	Karsten. Schw. J. 65, 394.
" "	"	2.030	Unger. See Böttger.
" "	"	2.150	Kopp. A. C. P. 36, 1.
" "	"	2.011, m. of 3	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.24	Filhol. Ann. (3), 21, 415.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium chloride-----	Na Cl -----	2.155, 15°.5---	Holker. P. M. (3), 27, 213.
“ “ Cryst.-----	“ -----	2.195 } -----	Deville. J. 8, 15.
“ “ After fu- sion.	“ -----	2.204 }	
“ “ -----	“ -----	2.142 } -----	Grassi. J. 1, 39.
“ “ -----	“ -----	2.207 }	
“ “ Halite-----	“ -----	2.135 -----	Hunt. J. 8, 976.
“ “ -----	“ -----	2.148 -----	Schiff. A. C. P. 108, 21.
“ “ -----	“ -----	2.153 ----- } -----	Schröder. P. A. 106, 226.
“ “ -----	“ -----	2.161 ----- }	
“ “ -----	“ -----	2.145 -----	Buignet. J. 15, 14.
“ “ -----	“ -----	2.1629, 15° ---	Stolba. J. P. C. 97, 503.
“ “ -----	“ -----	2.1543 -----	Haagen. P. A. 131, 117.
“ “ -----	“ -----	2.06—2.08 --	Page and Keightley. J. C. S. (2), 10, 566.
“ “ -----	“ -----	2.145 -----	Stas.
“ “ Natural-----	“ -----	2.137 -----	Rüdorff. Ber. 12, 251.
“ “ -----	“ -----	2.1641, 15° ---	Bedson and Wil- liams. Ber. 14, 2552.
“ “ Cryst. at 20°.	“ -----	2.16171 } -----	Nicol. P. M. (5), 15, 94.
“ “ Cryst. at 108°.	“ -----	2.15494 }	
“ “ -----	“ -----	1.612, at the melting point.	Braun. J. C. S. (2), 13, 31.
“ “ -----	“ -----	2.23 -----	Brügelmann. Ber. [17, 2359.
“ “ -----	“ -----	2.1653, 10° } -----	Andreae. J. P. C. (2), 30, 315.
“ “ -----	“ -----	2.1615, 20° }	
“ “ -----	“ -----	2.1594, 30° }	
“ “ -----	“ -----	2.15665, 40° }	
“ “ -----	“ -----	2.15435, 50° }	Zehnder. P. A. (2), 29, 259.
“ “ -----	“ -----	2.1881 ----- }	
“ “ -----	“ -----	2.1887 ----- }	Quincke. P. A. 135, 642.
“ “ -----	“ -----	2.092, 0° --- }	
“ “ Fused-----	“ -----	2.04 ----- }	Hassenfratz. Ann. 28, 3.
Potassium chloride-----	K Cl'-----	1.9367 -----	
“ “ -----	“ -----	1.836 -----	Kirwan. See Bött- ger.
“ “ -----	“ -----	1.9153 -----	Karsten. Schw. J. 65, 394.
“ “ -----	“ -----	1.945 -----	Kopp. A. C. P. 36, 1.
“ “ -----	“ -----	1.900 -----	Playfair and Joule. M. C. S. 2, 401.
“ “ -----	“ -----	1.97756, 4° ---	Playfair and Joule. J. C. S. 1, 137.
“ “ -----	“ -----	1.994 -----	Filhol. Ann. (3), 21, 415.
“ “ -----	“ -----	1.995 -----	Schiff. A. C. P. 108, 21.
“ “ -----	“ -----	1.918, 15°.5---	Holker. P. M. (3), 27, 213.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Potassium chloride	K Cl	1.995	Schröder. P. A. 106, 226.
" "	"	1.986	Buignet. J. 14, 15.
" "	"	1.94526, 15°	Stolba. J. P. C. 97, 503.
" "	"	1.90—1.91	Page and Keightley. J. C. S. (2), 10, 566.
" "	"	1.612, at the melting p't.	Braun. J. C. S. (2), 13, 31.
" " Not pressed.	"	1.980, 22°	Spring. Ber. 16, 2724.
" " Once pressed.	"	2.071, 20°	
" " Twice pressed.	"	2.068, 21°	
" "	"	1.93	Brügelmann. Ber. 17, 2359.
" " Fused	"	1.932, 0°	Quinke. P. A. 135, 642.
" " Fused	"	1.870	
Rubidium chloride	Rb Cl	2.807	Setterberg. Of. Ak. St. 1882, 6, 23.
Cæsium chloride	Cs Cl	3.992	" "
Ammonium chloride	Am Cl	1.450	Watson. See Böttger.
" "	"	1.54425	Hassenfratz. Ann. 28, 3.
" "	"	1.528	Mohs. See Böttger.
" "	"	1.578, m. of 3	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.5333, 4°	Playfair and Joule. J. C. S. 1, 137.
" "	"	1.52, 15°.5	Holker. P. M. (3), 27, 214.
" "	"	1.500	Kopp. A. C. P. 36, 1.
" "	"	1.522	Schiff. A. C. P. 108, 21.
" "	"	1.550	Buignet. J. 14, 15.
" "	"	1.5033	Stolba. J. P. C. 97, 503.
" "	"	1.5191	
" "	"	1.5209	
" "	"	1.456	W. C. Smith. Am. J. P. 53, 145.
Silver chloride	Ag Cl	5.4548	Proust.
" " Unfused	"	5.501	Karsten. Schw. J. 65, 394.
" " Black'd	"	5.5671	
" " After fusion.	"	5.4582	
" "	"	5.129	Herapath. P. M. 64, 321.
" "	"	5.548	Boullay. Ann. (2), 48, 266.
" "	"	5.55	Gmelin.
" " Native	"	5.31	Domeyko. Dana's Min.
" " "	"	5.43	
" "	"	5.517	Schiff. A. C. P. 108, 21.
" "	"	5.5943	[226. Schröder. P. A. 106,

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Silver chloride -----	Ag Cl -----	5.505, 0° -----	Rodwell. P. T. 1882, 1125.
“ “ Molten -----	“ -----	4.919, 451° -----	
“ “ “ -----	“ -----	5.5 -----	Quincke. P. A. 135, 642.
“ “ “ -----	“ -----	5.3 -----	Quincke. P. A. 138, 141.
Thallium chloride -----	Tl Cl -----	7.00 -----	Willm.
“ “ -----	“ -----	7.02 -----	Lamy. J. 15, 184.
Thallium trichloride -----	Tl ₂ Cl ₃ -----	5.9 -----	“ “
Magnesium chloride -----	Mg Cl ₂ -----	2.177, m. of 2 -----	Playfair and Joule. M. C. S. 2, 401.
“ “ -----	Mg Cl ₂ · 6 H ₂ O -----	1.562, m. of 4 -----	“ “
“ “ -----	“ -----	1.558 -----	Filhol. Ann. (3), 21, 415.
“ “ Bischofite. -----	“ -----	1.65 -----	Ochsenius. B. S. M. 1, 128.
Zinc chloride -----	Zn Cl ₂ -----	2.753, 13° -----	Bödeker. B. D. Z.
Cadmium chloride -----	Cd Cl ₂ -----	3.6254, 12° -----	“ “
“ “ -----	“ -----	3.655, 16°.9 -----	P. Knight. F. W. C.
“ “ -----	Cd Cl ₂ · 2 H ₂ O -----	3.324, m. of 3 -----	W. Knight. F. W. C.
Mercurous chloride -----	Hg Cl -----	7.1758 -----	Hassenfratz. Ann. 28, 3.
“ “ -----	“ -----	7.14 -----	Boullay. Ann. (2), 43, 266.
“ “ -----	“ -----	6.9925 -----	Karsten. Schw. J. 65, 394.
“ “ -----	“ -----	6.7107 -----	Herapath. P. M. 64, 321.
“ “ Native. -----	“ -----	6.482 -----	Haidinger. Dana's Min.
“ “ -----	“ -----	7.178 -----	Playfair and Joule. M. C. S. 2, 401.
“ “ -----	“ -----	6.56 -----	Schiff. A. C. P. 108, 21.
Mercuric chloride -----	Hg Cl ₂ -----	5.1398 -----	Hassenfratz. Ann. 28, 3.
“ “ -----	“ -----	5.14 -----	Gmelin.
“ “ -----	“ -----	5.42 -----	Boullay. Ann. (2), 43, 266.
“ “ -----	“ -----	5.4032 -----	Karsten. Schw. J. 65, 394.
“ “ -----	“ -----	6.223 -----	Playfair and Joule. M. C. S. 2, 401.
“ “ -----	“ -----	5.448, m. of 3 -----	Schröder. P. A. 107, 113.
Calcium chloride -----	Ca Cl ₂ -----	2.214 -----	Boullay. Ann. (2), 43, 266.
“ “ -----	“ -----	2.269 -----	
“ “ -----	“ -----	2.0401 -----	Karsten. Schw. J. 63, 394.
“ “ -----	“ -----	2.480 -----	Playfair and Joule. M. C. S. 2, 401.
“ “ -----	“ -----	2.240 -----	Filhol. Ann. (3), 21, 415. [21.
“ “ -----	“ -----	2.205 -----	Schiff. A. C. P. 108,
“ “ -----	“ -----	2.160, 27° -----	Favre and Valson. C. R. 77, 579.
“ “ -----	“ -----	2.219, 0° -----	Quincke. P. A. 135, 642.
“ “ Fused -----	“ -----	2.15 -----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Calcium chloride. Fused	Ca Cl_2	2.120	Quinke. P. A. 138, 141.
" "	$\text{Ca Cl}_2 \cdot 6 \text{H}_2\text{O}$	1.680, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.635	Filhol. Ann. (3), 21, 415.
" "	"	1.612, 10°	Kopp. J. 8, 44.
" "	"	1.701, 17°	Favre and Valson. C. R. 77, 579.
" "	"	1.654, m. of 4	Schröder. Dm. 1873.
" "	"	1.642 } Ex-	
" "	"	1.671 } tremes }	
Strontium chloride	Sr Cl_2	2.8033	Karsten. Schw. J. 65, 394.
" "	"	2.960	Filhol. Ann. (3), 21, 415.
" "	"	3.035, 17°	Favre and Valson. C. R. 77, 579.
" "	"	3.054	Schröder. A. C. P. 174, 249.
" "	"	2.770, at the melting point.	Braun. J. C. S. (2), 13, 31.
" " Fused	"	2.770	Quinke. P. A. 138, 141.
" "	$\text{Sr Cl}_2 \cdot 6 \text{H}_2\text{O}$	2.015, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.603	Filhol. Ann. (3), 21, 415.
" "	"	1.921	Buignet. J. 14, 15.
" "	"	1.932, 17°	Favre and Valson. C. R. 77, 579.
" "	"	1.954	Schröder. Dm. 1873.
" "	"	1.964, 16°	Mühlberg. F. W. C.
Barium chloride	Ba Cl_2	3.860	Boullay. Ann. (2), 43, 266.
" "	"	4.156	
" "	"	3.8	Richter. Watts' Dict.
" "	"	3.7037	Karsten. Schw. J. 65, 394.
" "	"	3.750	Filhol. Ann. (3), 21, 415.
" "	"	3.820	Schiff. A. C. P. 108, 21.
" "	"	3.872	Schröder. P. A. 107, 113.
" "	"	3.886	
" "	"	3.7, 17°	Kremers. P. A. 85, 42.
" "	"	3.844, 16°	Favre and Valson. C. R. 77, 579.
" "	"	3.92	Brügelmann. Ber. 17, 2359.
" " Molten	"	3.700	Quinke. P. A. 138, 141.
" "	$\text{Ba Cl}_2 \cdot 2 \text{H}_2\text{O}$	3.144, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.664	Filhol. Ann. (3), 21, 415.
" "	"	3.05435, 4°	Playfair and Joule. J. C. S. 1, 137.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Barium chloride-----	Ba Cl ₂ . 2 H ₂ O -----	3.052 -----	Schiff. A. C. P. 108, 21.
“ “ -----	“ -----	3.081 -----	Buignet. J. 14, 15.
“ “ -----	“ -----	3.054, 15°.5-----	Favre and Valson. C. R. 77, 579.
“ “ -----	“ -----	3.045 -----	Schröder. Dm. 1873.
Lead chloride -----	Pb Cl ₂ -----	5.29 -----	Monro.
“ “ Native -----	“ -----	5.238 -----	Dana's Min.
“ “ Unfused -----	“ -----	5.8022 -----	} Karsten. Schw. J. 65, 394.
“ “ After fusion -----	“ -----	5.6824 -----	
“ “ Cryst. -----	“ -----	5.802 -----	Schabus. J. 3, 322.
“ “ -----	“ -----	5.78 -----	Schiff. J. 11, 11.
“ “ -----	“ -----	5.80534, 15° -----	Stolba. J. P. C. 97, 503.
“ “ -----	“ -----	5.88 -----	Brügelmann. Ber. 17, 2359.
Chromous chloride-----	Cr Cl ₂ -----	2.751, 14° -----	Grabfield. F. W. C.
Chromic chloride -----	Cr ₂ Cl ₆ -----	3.03, 17° -----	Schafarik. J. P. C. 90, 12.
“ “ -----	“ -----	2.757, 15°, m. of 13. -----	Grabfield. F. W. C.
Manganous chloride -----	Mn Cl ₂ -----	2.478 -----	Schröder. A. C. P. 174, 249.
“ “ -----	Mn Cl ₂ . 4 H ₂ O -----	1.898 -----	} Schröder. Dm. 1873.
“ “ -----	“ -----	1.913 -----	
“ “ -----	“ -----	1.928 -----	
“ “ -----	“ -----	2.01, 10° -----	Bödeker. B. D. Z.
Ferrous chloride-----	Fe Cl ₂ -----	2.528 -----	Filhol. Ann. (3), 21, 415.
“ “ -----	“ -----	2.988, 17°.9-----	Grabfield. F. W. C.
“ “ -----	Fe Cl ₂ . 4 H ₂ O -----	1.926 -----	Filhol. Ann. (3), 21, 415.
“ “ -----	“ -----	1.937 -----	Schabus. J. 3, 327.
Ferric chloride -----	Fe ₂ Cl ₆ -----	2.804, 10°.8-----	Grabfield. F. W. C.
Nickel chloride-----	Ni Cl ₂ -----	2.56 -----	Schiff. A. C. P. 108, 21.
Cobalt chloride-----	Co Cl ₂ -----	2.937, m. of 3. -----	Playfair and Joule. M. C. S. 2, 401.
“ “ -----	Co Cl ₂ . 6 H ₂ O -----	1.84, 13° -----	Bödeker and Ehlers. B. D. Z.
Cuprous chloride -----	Cu Cl -----	3.6777 -----	Karsten. Schw. J. 65, 394.
“ “ -----	“ -----	3.376 -----	Playfair and Joule. M. C. S. 2, 401.
“ “ Nantoquite -----	“ -----	3.930 -----	Breithaupt. J. 25, 1145.
Cupric chloride-----	Cu Cl ₂ -----	3.054 -----	Playfair and Joule. M. C. S. 2, 401.
“ “ -----	Cu Cl ₂ . 2 H ₂ O -----	2.535, m. of 2. -----	“ “
“ “ -----	“ -----	2.47, 18° -----	Bödeker. B. D. Z.
Boron trichloride, 1-----	B Cl ₃ -----	1.35 -----	Wöhler and Deville. J. 10, 931.
Gallium chloride. Molten-----	Ga Cl ₃ -----	2.36, 80° -----	Boisbaudran. C. N. 44, 166.
Cerium chloride -----	Ce Cl ₃ -----	3.88, 15°.5-----	Robinson. C. N. 50, 251.
Didymium chloride-----	Di Cl ₃ . 6 H ₂ O -----	2.286 -----	} 15°.8 -----
“ “ -----	“ -----	2.287 -----	

Cleve. U. N. A. 1885.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Samarium chloride -----	Sm Cl ₃ . 6 H ₂ O -----	2.375 } 15° -----	Cleve. U. N. A. 1885.
“ “ -----	“ -----	2.392 }	
Carbon chloride.* -----			
Silicon tetrachloride -----	Si Cl ₄ -----	1.52371, 0° -----	Pierre. Ann. (3), 20, 26.
“ “ -----	“ -----	1.5083, 5°-10° -----	} Regnault. P. A. 62, 50. Haagen. P. A. 131, 117.
“ “ -----	“ -----	1.4983, 10°-15° -----	
“ “ -----	“ -----	1.4884, 15°-20° -----	
“ “ -----	“ -----	1.4878, 20° -----	
“ “ -----	“ -----	1.49276 -----	Mendelejeff. C. R. 51, 97.
“ “ -----	“ -----	1.522, 0° -----	Friedel and Crafts. A. J. S. (2), 43, 162.
“ “ -----	“ -----	1.52408, 0° -----	} Thorpe. J. C. S. 37, 372.
“ “ -----	“ -----	1.40294, 57°.57 -----	
Silicon hexchloride -----	Si ₂ Cl ₆ -----	1.58, 0° -----	Troost and Hautefeuille. Z. C. 14, 331.
Titanium tetrachloride -----	Ti Cl ₄ -----	1.76088, 0° -----	Pierre. Ann. (3), 20, 21.
“ “ -----	“ -----	1.7487, 5°-10° -----	} Regnault. P. A. 62, 50.
“ “ -----	“ -----	1.7403, 10°-15° -----	
“ “ -----	“ -----	1.7322, 15°-20° -----	
“ “ -----	“ -----	1.76041, 0° -----	} Thorpe. J. C. S. 37, 371.
“ “ -----	“ -----	1.52223, 136°.41 -----	
Germanium tetrachloride -----	Ge Cl ₄ -----	1.887, 18° -----	Winkler. Ber. 19, ref. 655.
Tin dichloride -----	Sn Cl ₂ . 2 H ₂ O -----	2.759 -----	Playfair and Joule. M. C. S. 2, 401.
“ “ -----	“ “ -----	2.71, 15°.5, s -----	} Penny. J. C. S. 4, 239.
“ “ -----	“ “ -----	2.5876, 37°.7, 1 -----	
“ “ -----	“ “ -----	2.634, 24° -----	Bishop. F. W. C.
Tin tetrachloride -----	Sn Cl ₄ -----	2.26712, 0° -----	Pierre. Ann. (3), 20, 19.
“ “ -----	“ -----	2.2618, 5°-10° -----	} Regnault. P. A. 62, 50.
“ “ -----	“ -----	2.2492, 10°-15° -----	
“ “ -----	“ -----	2.2368, 15°-20° -----	
“ “ -----	“ -----	2.234, 15° -----	Gerlach. J. 18, 237.
“ “ -----	“ -----	2.2328, 20° -----	Haagen. P. A. 131, 117.
“ “ -----	“ -----	2.27875, 0° -----	} Thorpe. J. C. S. 37, 372.
“ “ -----	“ -----	1.97813, 113°.89 -----	
Nitrogen trichloride -----	N Cl ₃ . ? -----	1.653 -----	Watts' Dictionary.
Phosphorus trichloride -----	P Cl ₃ -----	1.45 -----	Davy. Watts' Dict.
“ “ -----	“ -----	1.61616, 0° -----	Pierre. Ann. (3), 20, 9.
“ “ -----	“ -----	1.6091, 5°-10° -----	} Regnault. P. A. 62, 50.
“ “ -----	“ -----	1.6001, 10°-15° -----	
“ “ -----	“ -----	1.5911, 15°-20° -----	
“ “ -----	“ -----	1.6119, 0°, m. -----	} Buff. A. C. P. 4 of 2. Supp. Bd. 129. Boiling point, 76°.
“ “ -----	“ -----	1.59708, 10° -----	
“ “ -----	“ -----	1.47124, 76° -----	

* The chlorides, bromides, and iodides of carbon are assigned to a special division among organic compounds.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Phosphorus trichloride	$P Cl_3$	1.5774, 20°	Haagen. P. A. 131, 117.
" "	"	1.61275, 0°	} Thorpe. J. C. S. 37, 372.
" "	"	1.46845, 75°.95	
Vanadium dichloride	$V Cl_2$	3.23, 18°, s	Roscoe. P. T. 1869, 679.
Vanadium trichloride	$V Cl_3$	3.00, 18°, s	" "
Vanadium tetrachloride	$V Cl_4$	1.8584, 0°	} " "
" "	"	1.8363, 8°	
" "	"	1.8159, 32°	
Arsenic trichloride	$As Cl_3$	2.20495, 0°	} Pierre. Ann. (3), 20, Penny and Wallace. J. 5, 382.
" "	"	2.1766	
" "	"	2.1668, 20°	Haagen. P. A. 131, 117.
" "	"	2.20500, 0°	} Thorpe. J. C. S. 37, 372.
" "	"	1.91813, 130°.21	
Antimony trichloride	$Sb Cl_3$	3.064, 26°, s	Cooke. Proc. Amer. Acad. 1877.
" "	"	2.6766	} liquid
" "	"	2.6758	
" "	"	2.6750	
Antimony pentachloride	$Sb Cl_5$	2.3461, 20°	Haagen. P. A. 131, 117.
Bismuth trichloride	$Bi Cl_3$	4.56, 11°	Bödeker. B. D. Z.
Sulphur chloride	$S_2 Cl_2$	1.687	Dumas. Ann. (2), 49, 204.
" "	"	1.686	Marchand. J. P. C. 22, 507.
" "	"	1.6970, 5°-10°	} Regnault. P. A. 62, 50.
" "	"	1.6882, 10°-15°	
" "	"	1.6793, 15°-20°	
" "	"	1.7055, 0°	} Kopp. A. C. P. 95, 355.
" "	"	1.6802, 16°.7	
" "	"	1.6828, 20°	Haagen. P. A. 131, 117.
" "	"	1.4848, 138°	Ramsay. J. C. S. 35, 463.
" "	"	1.70941, 0°	} Thorpe. J. C. S. 37, 356.
" "	"	1.49201, 138°.12	
Selenium chloride	$Se_2 Cl_2$	2.906, 17°.5	Divers and Shimose. Ber. 17, 866.
Iodine monochloride	$I Cl$	3.263, 0°	} Hannay. J. C. S. (2), 11, 818. Melts at 24°.7. Boils at 100°.5 to 101°.5.
" "	"	3.222, 16°.5	
" "	"	3.206, 18°.2	
" "	"	3.180, 30°	
" "	"	3.176, 32°	
" "	"	3.132, 45°	
" "	"	3.127, 48°	
" "	"	3.084, 60°	
" "	"	3.032, 72°	
" "	"	3.036, 75°	
" "	"	2.988, 86°	
" "	"	2.984, 90°	
" "	"	2.964, 95°	
" "	"	2.958, 98°	
" "	"	3.18223, 0°	} Thorpe. J. C. S. 37, 371.
" "	"	2.88196, 101°.3	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Iodine trichloride-----	$I Cl_3$ -----	3.1107 -----	Christomanos. Ber. 10, 789.
Platinum dichloride -----	$Pt Cl_2$ -----	5.8696, 11° ---	Bödeker. B. D. Z.
Platinum tetrachloride---	$Pt Cl_4 \cdot 8 H_2 O$ ---	2.431, 15° ----	" "

2d. Double Chlorides.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ammonium magnesium chloride.	$Am_2 Mg Cl_4 \cdot 6 H_2 O$	1.456, 10° ----	Bödeker. B. D. Z.
Potassium zinc chloride--	$K_2 Zn Cl_4$ -----	2.297 -----	Schiff. A. C. P. 112, 88.
Ammonium zinc chloride--	$Am_2 Zn Cl_4$ -----	1.879 -----	" "
" " " --	" -----	1.72 } 10° -- {	Bödeker and Ehlers.
" " " --	" -----	1.77 } 10° -- {	B. D. Z.
" " " --	" -----	1.77 -----	Romanis. C. N. 49, 273.
Barium zinc chloride ----	$Ba_2 Zn Cl_6 \cdot 4 H_2 O$ ---	2.845 -----	Warner. C. N. 27, 271.
Potassium cadmium chloride.	$K_2 Cd Cl_4$ -----	2.500 -----	Schröder. Dm. 1873.
Strontium cadmium chloride.	$Sr Cd_2 Cl_6 \cdot 7 H_2 O$ ---	2.708, 24°, m. of 3.	W. Knight. F.W.C.
Barium cadmium chloride	$Ba Cd Cl_4 \cdot 4 H_2 O$ ---	2.968 -----	Topsöe. C. C. 4, 76.
" " " --	" -----	2.952, 24°.5 } 10° -- {	W. Knight. F.W.C.
" " " --	" -----	2.966, 25°.2 } 10° -- {	W. Knight. F.W.C.
Sodium mercury chloride.	$Na Hg Cl_3 \cdot 2 H_2 O$ ---	3.011 -----	Playfair and Joule. M. C. S. 2, 401.
Potassium mercury chloride.	$K Hg Cl_3 \cdot H_2 O$ ----	3.735, m. of 3.	" "
Ammonium mercury chloride.	$Am_2 Hg_2 Cl_6 \cdot H_2 O$ ---	3.822 -----	" "
" " " --	$Am_2 Hg Cl_4 \cdot H_2 O$ ---	2.938 -----	" "
Potassium iron chloride--	$K_2 Fe Cl_4 \cdot 2 H_2 O$ ---	2.162 -----	Schabus. J. 3, 327.
Potassium copper chloride	$K_2 Cu Cl_4 \cdot 2 H_2 O$ ---	2.426 -----	Playfair and Joule. M. C. S. 2, 401.
" " " --	" -----	2.400 -----	Schiff. A. C. P. 112, 88.
" " " --	" -----	2.359 -----	Kopp. J. 11, 10.
" " " --	" -----	2.410 -----	Tschermak. S. W. A. 45, 603.
" " " --	" -----	2.358 -----	Schröder. Dm. 1873.
" " " --	" -----	2.392 -----	
" " " --	" -----	2.425 -----	
Rubidium copper chloride	$Rb_2 Cu Cl_4 \cdot 2 H_2 O$ ---	2.895 -----	Wyrouboff. B. S. M. 10, 127.
Ammonium copper chloride.	$Am_2 Cu Cl_4 \cdot 2 H_2 O$ ---	2.018 -----	Playfair and Joule. M. C. S. 2, 401.
" " " --	" -----	1.963 -----	Schiff. A. C. P. 112, 88.
" " " --	" -----	1.977 -----	Kopp. J. 11, 10.
" " " --	" -----	2.066 -----	Tschermak. S. W. A. 45, 603.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ammonium copper chloride.	$\text{Am}_2 \text{Cu Cl}_4 \cdot 2 \text{H}_2 \text{O}$	1.984, 24°	Evans. F. W. C.
Potassium palladiochloride.	$\text{K}_2 \text{Pd Cl}_6$	2.806	Topsoë. C. C. 4, 76.
Ammonium palladiochloride.	$\text{Am}_2 \text{Pd Cl}_6$	2.418	" "
Magnesium palladiochloride.	$\text{Mg Pd Cl}_6 \cdot 6 \text{H}_2 \text{O}$	2.124	" "
Zinc palladiochloride	$\text{Zn Pd Cl}_6 \cdot 6 \text{H}_2 \text{O}$	2.359	" "
Nickel palladiochloride	$\text{Ni Pd Cl}_6 \cdot 6 \text{H}_2 \text{O}$	2.353	" "
Potassium iridichloride	$\text{K}_2 \text{Ir Cl}_6$	3.546, 15°	Bödeker. B. D. Z.
Ammonium iridichloride	$\text{Am}_2 \text{Ir Cl}_6$	2.856, 15°	" "
Potassium platosochloride	$\text{K}_2 \text{Pt Cl}_4$	3.3056, 20°.3 } 3.2909, 21° }	Clarke. A. J. S. (3), 16, 206.
Ammonium platosochloride.	$\text{Am}_2 \text{Pt Cl}_4$	2.84	Romanis. C. N. 49, 273.
Sodium platinchloride	$\text{Na}_2 \text{Pt Cl}_6 \cdot 6 \text{H}_2 \text{O}$	2.500	Topsoë. C. C. 4, 76.
Potassium platinchloride	$\text{K}_2 \text{Pt Cl}_2$	3.586, 15°	Bödeker. B. D. Z.
" "	"	3.694	Tschermak. S. W. A. 45, 603.
" "	"	3.3, 17°	Pettersson. U. N.
" "	"	3.32, 17°.2	A. 1874.
" "	"	3.344	Schröder. Dm. 1873.
Rubidium platinchloride	$\text{Rb}_2 \text{Pt Cl}_6$	3.96, 17°.4	Pettersson. U. N.
" "	"	3.94, 17°.5	A. 1874.
Ammonium platinchloride.	$\text{Am}_2 \text{Pt Cl}_6$	2.955 } 15° 3.009 }	Bödeker. B. D. Z.
" "	"	2.960	Tschermak. S. W. A. 45, 603.
" "	"	3.0, 17°.2	Pettersson. U. N. A. 1874.
" "	"	2.936	Schröder. Dm. 1873.
" "	"	3.065	Topsoë. C. C. 4, 76.
Thallium platinchloride	$\text{Tl}_2 \text{Pt Cl}_6$	5.76, 17°	Pettersson. U. N. A. 1874.
Magnesium platinchloride.	$\text{Mg Pt Cl}_6 \cdot 6 \text{H}_2 \text{O}$	2.437	Topsoë. C. C. 4, 76.
" "	$\text{Mg Pt Cl}_6 \cdot 12 \text{H}_2 \text{O}$	2.060	" "
Cadmium platinchloride	$\text{Cd Pt Cl}_6 \cdot 6 \text{H}_2 \text{O}$	2.882	" "
Barium platinchloride	$\text{Ba Pt Cl}_6 \cdot 4 \text{H}_2 \text{O}$	2.868	" "
Lead platinchloride	$\text{Pb Pt Cl}_6 \cdot 3 \text{H}_2 \text{O}$	3.681	" "
Manganese platinchloride	$\text{Mn Pt Cl}_6 \cdot 6 \text{H}_2 \text{O}$	2.692	" "
" "	$\text{Mn Pt Cl}_6 \cdot 12 \text{H}_2 \text{O}$	2.112	" "
Iron platinchloride	$\text{Fe Pt Cl}_6 \cdot 6 \text{H}_2 \text{O}$	2.714	" "
Copper platinchloride	$\text{Cu Pt Cl}_6 \cdot 6 \text{H}_2 \text{O}$	2.734	" "
Didymium platinchloride	$\text{Di Pt Cl}_7 \cdot 10\frac{1}{2} \text{H}_2 \text{O}$	2.683 } 2.696 }	21°.2
" "	"	2.709 } 2.714 }	21°.8
Samarium platinchloride	$\text{Sm Pt Cl}_7 \cdot 10\frac{1}{2} \text{H}_2 \text{O}$	2.662 } 2.664 }	18°
Didymium aurichloride	$\text{Di Au Cl}_6 \cdot 10 \text{H}_2 \text{O}$	2.739 } 2.744 }	16°.5
Samarium aurichloride	$\text{Sm Au Cl}_6 \cdot 10 \text{H}_2 \text{O}$	2.514	Playfair and Joule. M. C. S. 2, 401.
Potassium stannochloride	$\text{K}_2 \text{Sn Cl}_4 \cdot 3 \text{H}_2 \text{O}$	2.104	" "
Ammonium stannochloride.	$\text{Am}_2 \text{Sn Cl}_4 \cdot 3 \text{H}_2 \text{O}$		

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Potassium stannichloride	$K_2 Sn Cl_6$ -----	2.686 } -----	Schröder. Dm. 1873. Joergensen. Romanis. C. N. 49, 273.
" " -----	" -----	2.688 } -----	
" " -----	" -----	2.700 -----	
" " -----	" -----	2.948 -----	
Cæsium stannichloride	$Cs_2 Sn Cl_6$ -----	3.3308, 20°.5	Stolba. D. J. 198, 225.
Ammonium stannichloride.	$Am_2 Sn Cl_6$ -----	2.387, m. of 4	Schröder. Dm. 1873. Romanis. C. N. 49, 273.
" " -----	" -----	2.381 } Ex-	
" " -----	" -----	2.396 } tremes. }	
" " -----	" -----	2.511 -----	
Magnesium stannichloride.	$Mg Sn Cl_6 \cdot 6 H_2 O$ -----	2.080 -----	Topsoë and Christiansen.
Potassium antimony chloride.	$K_3 Sb Cl_6 \cdot 2 H_2 O$ -----	2.42 -----	Romanis. C. N. 49, 273.

3d. Oxy- and Sulpho-Chlorides.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Matlockite -----	$Pb_2 O Cl_2$ -----	7.21 -----	Greg. J. 4, 821.
Mendipite -----	$Pb_3 O_2 Cl_2$ -----	7.0—7.1 -----	Dana's Mineralogy.
Atacamite -----	$Cu_2 Cl (O H)_3$ -----	3.898 -----	Zepharovich. J. 24, 1186.
" -----	" -----	3.757 -----	Tschermak. J. 26, 1201.
" -----	" -----	3.7688 -----	Zepharovich. J. 26, 1201.
Botallackite -----	$Cu_4 Cl_2 (O H)_6 \cdot 3 H_2 O$ -----	3.6 -----	Church. J. C. S. 18, 213.
Tallingite -----	$Cu_5 Cl_2 (O H)_8$ -----	3.5 -----	Church. J. C. S. 18, 78.
Mercuric oxychloride -----	$Hg_3 O_2 Cl_2$ -----	8.63 -----	Blaas. Z. K. M. 5, 283.
Didymium oxychloride -----	$Di O Cl$ -----	5.725 } -----	Cleve. U. N. A. 1885.
" " -----	" -----	5.735 } 21°.2 }	
" " -----	" -----	5.793, 21°.5 }	
" " -----	" -----	6.987 } 21° -----	
Samarium oxychloride -----	$Sm O Cl$ -----	7.047 } -----	" "
Nitroxyl chloride -----	$N O_2 Cl$ -----	1.3677, 8° -----	Baudrimont. J. P. C. 31, 478.
" " -----	" -----	1.32, 14° -----	Müller. A. C. P. 122, 1.
Phosphorus oxychloride -----	$P O Cl_3$ -----	1.673, 14° -----	Cahours. J. P. C. 45, 129.
" " -----	" -----	1.70, 12° -----	Wurtz. J. 1, 365.
" " -----	" -----	1.662, 19°.5 -----	Mendelejeff. J. 13, 7.
" " -----	" -----	1.69371, 10° -----	Buff. A. C. P. 4 Supp. Bd., 129.
" " -----	" -----	1.69106, 14° -----	
" " -----	" -----	1.68626, 15° -----	
" " -----	" -----	1.64945, 51° -----	
" " -----	" -----	1.509116, 110° -----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Phosphorus oxychloride	$P O Cl_3$	1.66	Wichelhaus. J. 20, 149.
" "	"	1.71163, 0°	} Thorpe. J. C. S. 37, 337.
" "	"	1.50967, 107°.23	
" "	"	1.5142, 106°.7	
Pyrophosphoric chloride	$P_2 O_3 Cl_4$	1.58, 7°	Schall. Ber. 17, 2204.
			Geuther and Michaelis. B. S. C. 16, 231.
Vanadyl dichloride	$V O Cl_2$	2.88, 13°, s	Roscoe. P.T. 1868, 1.
Vanadyl trichloride	$V O Cl_3$	1.764, 20	Schafarik. J. P. C. 76, 142.
" "	"	1.841, 14°.5	} Roscoe. P.T. 1868, 1.
" "	"	1.836, 17°.5	
" "	"	1.828, 24°	
" "	"	1.86534, 0°	} Thorpe. J. C. S. 37, 348.
" "	"	1.63073, 127°.19	
" "	"	1.854, 18°	
Antimony oxychloride	$Sb_4 O_5 Cl_2$	5.014, s.	L'Hôte. C. R. 101, 1151.
			Cooke. Proc. Am. Acad. 1877.
Bismuth oxychloride	$Bi O Cl$	7.2, 20°, s.	Muir, Hoffmeister, and Robbs. J. C. S. 39, 37. [922.
Daubreite	$Bi_5 O_6 Cl_3$	6.4—6.5	Domeyko. C. R. 82, 922.
Sulphur oxychloride	$S_2 O Cl_4$	1.656, 0°	Ogier. Ber. 15, 922.
Thionyl chloride	$S O Cl_2$	1.675, 0°	Wurtz. J. P. C. 99, 255.
" "	"	1.67673, 0°	} Thorpe. J. C. S. 37, 354.
" "	"	1.52143, 78°.8	
" "	"	1.6554, 10°.4	
Sulphuryl chloride	$S O_2 Cl_2$	1.661, 21°	Nasini. Bei. 9, 324.
" "	"	1.70814, 0°	Behrends. J. 30, 210.
" "	"	1.56025, 69°.95	} Thorpe. J. C. S. 37, 359.
Disulphuryl chloride	$S_2 O_5 Cl_2$	1.818, 16°	
" "	"	1.762	
" "	"	1.819, 18°	H. Rose. P. A. 44, 291. [121.
" "	"	1.85846, 0°	Rosenstiehl. J. 14, Michaelis.
" "	"	1.60610, 139°.59	} Thorpe. J. C. S. 37, 360.
Chlorosulphonic acid	$S O_2. O H. Cl$	1.78474, 0°	
" "	"	1.54874, 155°.3	
" "	"	1.7633, 14°	} Thorpe. J. C. S. 37, 358.
Selenyl chloride	$Se O Cl_2$	2.44	
" "	"	2.443, 13°	
			Nasini. Bei. 9, 324.
			Weber. J. 12, 91.
			Michaelis. Z. C. 13, 460.
Chromyl dichloride	$Cr O_2 Cl_2$	1.9134, 10°	Thomson. P. T. 1827, 159.
" "	"	1.71, 21°	Walter. Ann. (2), 66, 387.
" "	"	1.92, 25°	Thorpe. J. 21, 226.
" "	"	1.7538, 117°	Ramsay. J. C. S. 35, 463.
" "	"	1.96101, 0°	} Thorpe. J. C. S. 37, 372. [115.
" "	"	1.75780, 115°.9	
Phosphorussulphochloride	$P S Cl_3$	1.631, 22°	
" "	"	1.66820, 0°	} Thorpe. J. C. S. 37, 341.
" "	"	1.45599, 125°.12	

IV. INORGANIC BROMIDES.

1st. Simple Bromides.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Lithium bromide	Li Br	3.102, 17°	Clarke. A. J. S. (3), 13, 293.
Sodium bromide	Na Br	2.952	Schiff. A. C. P. 108, 21.
" "	"	3.079, 17°.5	Kremers. J. 10, 67.
" "	"	3.011	Tschermak. S. W. A. 45, 603.
" "	"	3.198, 17°.3	Favre and Valson. C. R. 77, 579.
" " Fused	"	2.448	Quincke. P. A. 138, 141.
" "	Na Br. 4 H ₂ O	2.34	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.165, 16°.8	Favre and Valson. C. R. 77, 579.
Potassium bromide	K Br	2.415	Karsten. Schw. J. 65, 394.
" "	"	2.672	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.690, m. of 6	Schröder. P. A. 106, 226.
" "	"	2.712, 12°.7	Beamer. F. W. C.
" " Fused	"	2.199	Quincke. P. A. 138, 141.
" " Not pressed	"	2.505	Spring. Ber. 16, 2724.
" " Once "	"	2.704	
" " Twice "	"	2.700	
Rubidium bromide	Rb Br	3.358	Setterberg. Of. Ak. St. 1882, 6, 23.
Cæsium bromide	Cs Br	4.463	" "
Ammonium bromide	Am Br	2.379	Schröder. P. A. 106, 226.
" "	"	2.266, 10°	Bödeker. B. D. Z.
" " Cryst.	"	2.327	Eder. Ber. 14, 511.
" " Sublimed	"	2.3394	
" "	"	2.456	Stas. Mem. Acad. Belg. 43, 1.
Silver bromide	Ag Br	6.3534	Karsten. Schw. J. 65, 394.
" "	"	6.425, m. of 7	Schröder. P. A. 106, 226.
" "	"	6.215, 17°	Clarke. A. J. S. (3), 13, 294.
" "	"	6.245, 0°	Rodwell. P. T. 1882, 1125.
" " Molten	"	5.595, 427°	
" "	"	6.2	Quincke. P. A. 138, 141.
Thallium bromide. Precip.	Tl Br	7.540, 21°.7	Keck. F. W. C.
" " After fusion.	"	7.557, 17°.3	
Zinc bromide	Zn Br ₂	3.643, 10°	Bödeker. B. D. Z.
Cadmium bromide	Cd Br ₂	4.712	Bödeker and Giesecke. B. D. Z.
" "	"	4.910	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Cadmium bromide	Cd Br ₂	4.794, 19°.9	Knight. F. W. C.
Mercurous bromide	Hg Br	7.307	Karsten. Schw. J. 65, 394.
Mercuric bromide	Hg Br ₂	5.9202	" "
" "	"	5.7298, 16°	Beamer. F. W. C.
" "	"	5.7461, 18°	
Calcium bromide	Ca Br ₂	3.32, 11°	Bödeker. B. D. Z.
Strontium bromide	Sr Br ₂	3.962, 12°	" "
" "	"	3.985, 20°.5	Favre and Valson. C. R. 77, 579.
" "	Sr Br ₂ . 6 H ₂ O	2.358, 18°	" "
Barium bromide	Ba Br ₂	4.23	Schiff. A. C. P. 108, 21.
" "	Ba Br ₂ . 2 H ₂ O	3.690	" "
" " Cryst.	"	3.710	Schröder. Dm. 1873.
" " Pulv.	"	3.588	
" "	"	3.679, 24°.3	Harper. F. W. C.
Lead bromide	Pb Br ₂	6.6302	Karsten. Schw. J. 65, 394.
" "	"	6.611, 17°.5	Kremers. J. 5, 397.
" " Ppt.	"	6.572, 19°.2	Keck. F. W. C.
Cuprous bromide	Cu Br	4.72, 12°	Bödeker. B. D. Z.
Boron tribromide	B Br ₃	2.69, 1	Wöhler and Deville. J. 10, 94.
Aluminum bromide	Al Br ₃	2.54	Dewille and Troost. J. 12, 26.
Didymium bromide	Di Br ₃ . 6 H ₂ O	2.803	Cleve. U. N. A. 1885.
" "	"	2.817	
Samarium bromide	Sn Br ₃ . 6 H ₂ O	2.969	" "
" "	"	2.973	
Silicon tetrabromide	Si Br ₄	2.8128, 0°	Pierre. Ann. (3), 20, 28.
Titanium tetrabromide	Ti Br ₄	2.6	Duppa. J. 9, 365.
Tin dibromide	Sn Br ₂	5.117, 17°	Raymann and Preis. A. C. P. 223, 323.
Tin tetrabromide	Sn Br ₄	3.322, 39°, 1	Bödeker. B. D. Z.
" "	"	3.349, 35°	Raymann and Preis. A. C. P. 223, 323.
Phosphorus tribromide	P Br ₃	2.92489, 0°	Pierre. Ann. (3), 20, 11.
" "	"	2.92311, 0°	Thorpe. J. C. S. 37, 335.
" "	"	2.49541, 172°.9	
Arsenic tribromide	As Br ₃	3.66, 15°	Bödeker. B. D. Z.
Antimony tribromide	Sb Br ₃	3.641, 90°, 1	Kopp. A. C. P. 95, 352.
" "	"	3.473, 96°, 1	Mac Ivor. C. N. 29, 179.
" "	"	4.148, 23°, s	Cooke. Proc. Am. Acad. 1877.
Bismuth tribromide	Bi Br ₃	5.6041	Bödeker. B. D. Z.
" "	"	5.4, 20°	Muir, Hoffmeister, and Robbs. J. C. S. 39, 37.
Sulphur bromide	S ₂ Br ₂	2.628, 4°	Hannay. J. C. S. 33, 288.
Selenium bromide	Se ₂ Br ₂	3.604, 15°	Schneider. P. A. 128, 327.

2d. Double, Oxy-, and Sulpho-Bromides.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ammonium zinc bromide	$\text{Am}_2 \text{Zn Br}_4$	2.625, 13°	Bödeker. B. D. Z.
Barium cadmium bromide	$\text{Ba Cd Br}_4 \cdot 4 \text{H}_2 \text{O}$	3.687	Topsoë. C. C. 4, 76.
" " "	"	3.665, 24°	Harper. F. W. C.
Hydrogen mercury bromide.	$\text{H Hg Br}_3 \cdot 4 \text{H}_2 \text{O}$	3.17, fused	Thomsen. J. P. C. (2), 11, 283.
Potassium mercury bromide.	K Hg Br_3	4.410, m. of 3.	Beamer. F. W. C.
" " "	$\text{K Hg Br}_3 \cdot \text{H}_2 \text{O}$	3.865, 22°	" "
Potassium stannibromide.	$\text{K}_2 \text{Sn Br}_6$	3.783	Topsoë. C. C. 4, 76.
Ammonium stannibromide.	$\text{Am}_2 \text{Sn Br}_6$	3.505	" "
Sodium platinbromide	$\text{Na}_2 \text{Pt Br}_6 \cdot 6 \text{H}_2 \text{O}$	3.323	" "
Potassium platinbromide	$\text{K}_2 \text{Pt Br}_6$	4.68, 14°	Bödeker. B. D. Z.
" " "	"	4.541	Topsoë. C. C. 4, 76.
Ammonium platinbromide	$\text{Am}_2 \text{Pt Br}_6$	4.200	" "
Magnesium platinbromide	$\text{Mg Pt Br}_6 \cdot 12 \text{H}_2 \text{O}$	2.802	" "
Zinc platinbromide	$\text{Zn Pt Br}_6 \cdot 12 \text{H}_2 \text{O}$	2.877	" "
Strontium platinbromide	$\text{Sr Pt Br}_6 \cdot 9 \text{H}_2 \text{O}$	2.923	" "
Barium platinbromide	$\text{Ba Pt Br}_6 \cdot 10 \text{H}_2 \text{O}$	3.713	" "
Lead platinbromide	Pb Pt Br_6	6.025	" "
Manganese platinbromide	$\text{Mn Pt Br}_6 \cdot 12 \text{H}_2 \text{O}$	2.759	" "
Nickel platinbromide	$\text{Ni Pt Br}_6 \cdot 6 \text{H}_2 \text{O}$	3.715	" "
Cobalt platinbromide	$\text{Co Pt Br}_6 \cdot 12 \text{H}_2 \text{O}$	2.762	Two samples. Topsoë. C. C. 4, 76
" " "	"	2.634	
Didymium auribromide	$\text{Di Au Br}_6 \cdot 10 \text{H}_2 \text{O}$	3.297	21°.2 Cleve. U.N.A. 1885.
" " "	"	3.311	
Samarium auribromide	$\text{Sm Au Br}_6 \cdot 10 \text{H}_2 \text{O}$	3.383	21°.2 " "
" " "	"	3.398	
Nitrosyl tribromide	N O Br_3	2.628, 22°.6	Landolt. J. 13, 104.
Phosphoryl tribromide	P O Br_3	2.822	Ritter. J. 8, 301.
Vanadyl tribromide	V O Br_3	2.9673, 0°	Roscoe. A. C. P. 8 Supp. Bd. 95.
" " "	"	2.9325, 14°.5	
Bismuth oxybromide	Bi O Br	6.70, 20°	Muir, Hoffmeister, and Robbs. J. C. S. 39, 37.
Phosphorus sulphobromide.	P S Br_3	2.85, 17°	Michaelis. A. C. P. 164, 9.
" " "	"	2.87	Mac Ivor. C. N. 29, 116.
" " "	$\text{P S Br}_3 \cdot \text{H}_2 \text{O}$	2.7937, 18°	Michaelis. A. C. P. 164, 9.
" " "	$\text{P}_2 \text{S}_3 \text{Br}_4$	2.2621, 17°	" "
Arsenic sulphobromide	$\text{As S}_2 \text{Br}_3$	2.789	Hannay. J. C. S. 33, 291.

V. INORGANIC IODIDES.

1st. Simple Iodides.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Lithium iodide	Li I	3.485, 23°	Clarke. A. J. S. (3), 13, 293.
Sodium iodide	Na I	3.450	Filhol. Ann. (3), 21, 415.
" "	"	3.654, 18°.2	Favre and Valson. C. R. 77, 579.
" "	Na I. 4 H ₂ O	2.448, 20°.8	" "
Potassium iodide	K I	3.078	Boullay. Ann. (2), 43, 266.
" "	"	3.104	
" "	"	2.9084	Karsten. Schw. J. 65, 394.
" "	"	3.059	Playfair and Joule. M. C. S. 2, 401.
" "	"	3.056	Filhol. Ann. (3), 21, 415.
" "	"	2.850	Schiff. A. C. P. 108, 21.
" "	"	2.970	Buignet. J. 14, 15.
" "	"	3.081	Schröder. P. A. 106, 226.
" "	"	3.077	
" "	"	2.497 at the melting p't.	Braun. J. C. S. (2), 13, 31.
" " Fused	"	2.497	Quinke. P. A. 138, 141.
" " Not press'd	"	3.012, 20°	Spring. Ber. 16, 2724.
" " Once "	"	3.110, 22°	
" " Twice "	"	3.112, 20°	
Potassium triiodide	K I ₃	3.498	Johnson. C. N. 34, 256.
Rubidium iodide	Rb I	3.567	Setterberg. Of. Ak. St. 1882, 6, 23.
Cæsium iodide	Cs I	4.537	" "
Ammonium iodide	Am I	2.498, 11°	Bödeker. B. D. Z.
" "	"	2.445	Schröder. Dm. 1873.
Ammonium triiodide	Am I ₃	3.749	Johnson. C. N. 37, 246.
Iodammonium iodide	N H ₃ I ₂	2.46, 15°	Seamon. C. N. 44, 189.
Silver iodide	Ag I	5.614	Boullay. Ann. (2), 43, 266.
" "	"	5.0262	Karsten. Schw. J. 65, 394.
" "	"	5.500	Filhol. Ann. (3), 21, 415.
" "	"	5.35	Schiff. A. C. P. 108, 21.
" "	"	5.650	Schröder. P. A. 106, 226.
" "	"	5.718	
" " Cryst.	"	5.669, 14°	Damour. Quoted, C. R. 64, 314.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Silver iodide. Cryst. -----	Ag I -----	5.470 } 0° --	H. St. Claire Deville. P. A. 132, 307. C. R. 64, 325.
" " " -----	" -----	5.544 } 0° --	
" " After fusion. -----	" -----	5.687 -----	
" " Precipitated. -----	" -----	5.807, 0° -----	Fizeau.
" " Ppt compressed. -----	" -----	5.569 -----	
" " After rep. fusion. -----	" -----	5.675, 0° -----	
" " After one fusion. -----	" -----	5.660, 0° -----	Rodwell. P. T. 1882, 1125.
" " From Ag in H I. -----	" -----	5.812, 0° -----	
" " Ppt. after fusion. -----	" -----	5.681, 0° -----	
" " At max. density. -----	" -----	5.771, 163° -----	
" " At min. density. -----	" -----	5.673, -----	
" " Molten -----	" -----	5.522, 527° -----	Breithaupt. Dana's Min.
" " Iodyrite -----	" -----	5.64—5.67 -----	
" " " -----	" -----	5.504 -----	
" " " -----	" -----	5.707 -----	Damour. J. 7, 870.
" " " -----	" -----	5.366 -----	J. L. Smith. J. 7, 870.
" " " -----	" -----	5.677, 14° -----	Damour. Quoted, C. R. 64, 314.
Thallium iodide. Precip. -----	Tl I -----	7.072, 15°.5 } -----	Twitchell. F. W. C.
" " Cast. -----	" -----	7.0975, 14°.7 } -----	
Zinc iodide -----	Zn I ₂ -----	4.696, 10° -----	Bödeker and Gie- secke. B. D. Z.
" " -----	" -----	4.666, 14°.2 -----	Kebler. F. W. C.
Cadmium iodide. <i>a</i> variety. -----	Cd I ₂ -----	5.543, m. of 8 } -----	Kebler. A. C. J. 5, 235. Six samples, prepared by differ- ent methods. Tem- peratures of weigh- ing, 10°.5 to 20°.4.
" " " -----	" -----	5.622, m. of 8 } -----	
" " " -----	" -----	5.660, m. of 7 } -----	
" " " -----	" -----	5.729, m. of 6 } -----	
" " " -----	" -----	5.610, m. of 3 } -----	
" " " -----	" -----	5.675, m. of 4 } -----	Twitchell. A. C. J. 5, 235.
" " " -----	" -----	5.701, m. of 4 -----	
" " <i>β</i> variety. -----	" -----	4.576, 10° -----	Bödeker. B. D. Z.
" " " -----	" -----	4.612, m. of 7 } -----	{ Kebler. A. C. J. 5, 235. Two lots, 14° to 15°.4.
" " " -----	" -----	4.596, m. of 7 } -----	
" " " -----	" -----	4.688, m. of 5 -----	Twitchell. A. C. J. 5, 235.
Mercurous iodide -----	Hg I -----	7.75 -----	Boullay. Ann. (2), 43, 266.
" " -----	" -----	7.6445 -----	Karsten. Schw. J. 65, 394.
Mercuric iodide -----	Hg I ₂ -----	6.32 -----	Boullay. Ann. (2), 43, 266.
" " -----	" -----	6.2009 -----	Karsten. Schw. J. 65, 394.
" " -----	" -----	6.250 -----	Filhol. Ann. (3), 21, 415.
" " -----	" -----	5.91 -----	Schiff. A. C. P. 108, 21.
" " -----	" -----	6.27 -----	Tschermak. S. W. A. 45, 603.
" " Red -----	" -----	6.231, m. of 7 -----	Owens. F. W. C.
" " " -----	" -----	6.2941 } 0° } -----	
" " " -----	" -----	6.3004 } 0° } -----	
" " " -----	" -----	6.276, 126° -----	
" " Yellow -----	" -----	6.225, 126° -----	
			Rodwell and Elder. P. T. 1882, 1143.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Mercuric iodide. Solid	Hg I ₂	6.179, 200°	Rodwell and Elder. P. T. 1882, 1143.
" " Molten	"	5.286, 200°	
Strontium iodide	Sr I ₂	4.415, 10°	Bödeker. B. D. Z.
Barium iodide	Ba I ₂	4.917	Filhol. Ann. (3), 21, 415.
" " "	Ba I ₂ . 7 H ₂ O	2.673, 20°.3	Leonard. F. W. C.
Lead iodide	Pb I ₂	6.11	Boullay. Ann. (2), 43, 266.
" " "	"	6.0212	Karsten. Schw. J. 65, 394.
" " "	"	6.384	Filhol. Ann. (3), 21, 415.
" " "	"	6.07	Schiff. A. C. P. 108, 21.
" " "	"	6.207	Schröder. P. A. 107, 113.
" " "	"	6.12	Rodwell. P. T. 1882, 1144.
" " Molten	"	5.6247, 383°	
Iron iodide	Fe I ₂ . 4 H ₂ O	2.873, 12°	Bödeker. B. D. Z.
Cuprous iodide	Cu I	4.410	Schiff. A. C. P. 108, 21.
" " "	"	5.6936	Rodwell. P. T. 1882, 1153.
Aluminum iodide	Al I ₃	2.63	Deville and Troost. J. 12, 26.
Tin tetriodide	Sn I ₄	4.696, 11°	Bödeker. B. D. Z.
Arsenic triiodide	As I ₃	4.39, 13°	" "
" " "	"	4.374	Schröder. Dm. 1873.
Arsenic pentiodide	As I ₅	3.93, approx.	Sloan. C. N. 46, 194.
Antimony triiodide	Sb I ₃	5.01, 10°	Bödeker. B. D. Z.
" " "	"	4.676	Schröder. Dm. 1873.
" " Hexagonal	"	4.848, 24°, m. of 5.	Cooke. Proc. Am. Acad. 1877.
" " Monoclinic	"	4.768, 22°, m. of 2.	
Bismuth triiodide	Bi I ₃	5.652, 10°	Bödeker. B. D. Z.
" " "	"	5.544, 18°.4	Kebler. A. C. J. 5, 235.
" " "	"	5.64	Gott and Muir. J. C. S. 53, 137.
" " "	"	5.65	

2d. Double and Oxy-Iodides.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Potassium cadmium iodide	K ₂ Cd I ₄ . 2 H ₂ O	3.359, m. of 4.	Leonard. F. W. C.
Potassium mercury iodide	K ₂ Hg ₂ I ₆ . 3 H ₂ O	4.254, 22°	Owens. F. W. C.
" " "	"	4.289, 23°.5	
Silver mercury iodide	2 Ag I. Hg I ₂	5.9984, 0°	Bellati and Roman- ese. Bei. 5, 179.
" " "	3 Ag I. Hg I ₂	5.9302, 0°	" "
Copper mercury iodide	2 Cu I. Hg I ₂	6.0956, 0°	" "
" " "	2 Cu I. 2 Hg I ₂	6.1507, 14°	Heighway. F. W. C.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Silver copper iodide-----	2 Cu I. Ag I-----	5.7302-----	Rodwell. P. T. 1882, 1160.
“ “ “-----	2 Cu I. 2 Ag I-----	5.7225-----	“ “
“ “ “-----	2 Cu I. 3 Ag I-----	5.7160-----	“ “
“ “ “-----	2 Cu I. 4 Ag I-----	5.7064-----	“ “
“ “ “-----	2 Cu I. 12 Ag I-----	5.6950-----	“ “
Silver lead iodide-----	Pb I ₂ . Ag I-----	5.923, 0°-----	“ “
Sodium platiniodide-----	Na ₂ Pt I ₆ . 6 H ₂ O-----	3.707-----	Topsoë. C. C. 4, 76.
Potassium platiniodide-----	K ₂ Pt I ₆ -----	5.154-----	Bödeker. B. D. Z.
“ “-----	“-----	5.198-----	
“ “-----	“-----	5.031-----	
Ammonium platiniodide-----	Am ₂ Pt I ₆ -----	4.610-----	Topsoë. C. C. 4, 76.
Magnesium platiniodide-----	Mg Pt I ₆ . 9 H ₂ O-----	3.458-----	“ “
Zinc platiniodide-----	Zn Pt I ₆ . 9 H ₂ O-----	3.689-----	“ “
Manganese platiniodide-----	Mn Pt I ₆ . 9 H ₂ O-----	3.604-----	“ “
Iron platiniodide-----	Fe Pt I ₆ . 9 H ₂ O-----	3.455-----	“ “
Nickel platiniodide-----	Ni Pt I ₆ . 6 H ₂ O-----	3.976-----	“ “
“ “-----	Ni Pt I ₆ . 9 H ₂ O-----	3.549-----	“ “
Cobalt platiniodide-----	Co Pt I ₆ . 9 H ₂ O-----	3.618-----	“ “
“ “-----	Co Pt I ₆ . 12 H ₂ O-----	3.048-----	“ “
Schwartzembergite-----	Pb ₃ I ₂ O ₂ -----	6.3-----	Liebe. J. 20, 1008.
“-----	“-----	5.7-----	Schwartzemberg. Dana's Min.
Lead oxyiodide-----	Pb ₁₁ I ₄ O ₁₀ -----	7.81-----	Cross and Sugiura. J. C. S. 33, 406.

VI. CHLOROBROMIDES, CHLORIODIDES, AND BROMIODIDES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Embolite-----	Ag (Cl Br)-----	5.31—5.43-----	Domeyko. Dana's Min.
“-----	“-----	5.806-----	Breithaupt. J. 2, 781.
“ (Cl ₃ Br ₂)-----	“-----	5.53-----	Yorke. J. C. S. 4, 150.
Lead chlorobromide-----	Pb Cl Br-----	5.741-----	Iles. A. C. J. 3, 52.
Silicon chlorobromide-----	Si Cl Br ₃ -----	2.432-----	Reynolds. C. N. 55, 223.
Tin chlorobromide-----	Sn Cl Br ₃ -----	3.349, 35°-----	Reis and Raymann. J. C. S. 44, 424.
Phosphorus oxychlorobro- mide.	P O. Cl ₂ Br-----	2.059, 0°-----	Menschutkin. J. P. C. 98, 485.
“ “-----	“-----	2.12065, 0°-----	} Thorpe. J. C. S. 37, 372.
“ “-----	“-----	1.83844, 137° 6'-----	
Silver chlorobromiodide*-----	Ag I. 2 Ag Br. 2 Ag Cl-----	6.152, 0°-----	} Rodwell. P. T. 1882, 1140.
“ “-----	“-----	5.5118, 383°-----	
“ “ (Iodobromite)-----	“-----	5.713, 18°-----	Lasaulx. J. C. S. 36, 366.
“ “-----	Ag I. Ag Br. Ag Cl-----	6.1197, 0°-----	} Rodwell. P. T. 1882, 1140.
“ “-----	“-----	5.5673, 331°-----	

* Rodwell's chlorobromiodides may be regarded as alloys. For each of these the higher temperature is the melting point.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Silver chlorobromiodide--	2 Ag I. Ag Br. Ag Cl	6.503, 0° --- } 5.6971, 326 - }	Rodwell. P. T. 1882, 1140.
" " -----	"		
" " -----	3 Ag I. Ag Br. Ag Cl	5.9717, 0° -- }	" "
" " -----	"	5.6480, 354° }	
" " -----	4 Ag I. Ag Br. Ag Cl	5.907, 0° --- }	" "
" " -----	"	5.680, 380° - }	

VII. AMMONIO-CHLORIDES, AMMONIO-BROMIDES, AMMONIO-IODIDES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Cadmammonium chloride	N ₂ H ₆ Cd. Cl ₂ -----	2.632 -----	Topsoë. C. C. 4, 76.
Cadmammonium bromide	N ₂ H ₆ Cd. Br ₂ -----	3.366 -----	" "
Dimercurosammonium chloride.	N H ₂ Hg' ₂ . Cl -----	6.858, m. of 2-	Playfair and Joule. M. C. S. 2, 401.
Dimercurammonium chloride.	N ₂ H ₄ Hg'' ₂ . Cl ₂ ----	5.700 -----	" "
Tetramercurammonium chloride.	N ₂ Hg'' ₄ Cl ₂ . 2 H ₂ O	7.176, m. of 2-	" "
Cuprammonium chloride.	N ₂ H ₆ Cu. Cl ₂ -----	2.194 -----	" "
Copper ammonio-chloride	Cu Cl ₂ . 4 N H ₃ . H ₂ O	1.672 -----	" "
Nickel ammonio-bromide	Ni Br ₂ . 6 N H ₃ -----	1.837 -----	Topsoë. C. C. 4, 76.
Nickel ammonio-iodide --	Ni I ₂ . 6 N H ₃ -----	2.101 -----	" "
Purpureo-cobalt hexchloride.	Co ₂ (N H ₃) ₁₀ . Cl ₆ ----	1.802, 23° ----	Gibbs and Genth. A. J. S. (2), 23, 234.
" " " --	" ----	1.802 } 15° {	Jørgensen. J. P. C.
" " " --	" ----	1.808 } {	(2), 19, 49.
Purpureo-cobalt hexbromide.	Co ₂ (N H ₃) ₁₀ . Br ₆ ----	2.483, 17°.8----	" "
Purpureo-cobalt chlorobromide.	Co ₂ (N H ₃) ₁₀ . Cl ₄ Br ₂	2.095, 16°.8----	" "
Purpureo-cobalt bromochloride. " " --	Co ₂ (N H ₃) ₁₀ . Cl ₂ Br ₄	2.161 } 17° ----	" "
" " " --	" ----	2.165 } {	
Luteo-cobalt hexchloride.	Co ₂ (N H ₃) ₁₂ . Cl ₆ ----	1.7016, 20° ----	Gibbs and Genth. A. J. S. (2), 23, 319.
Purpureo-chromium hexchloride.	Cr ₂ (N H ₃) ₁₀ . Cl ₆ ----	1.687, 15°.5----	Jørgensen. J. P. C. (2), 20, 105.
Purpureo-chromium chlorobromide.	Cr ₂ (N H ₃) ₁₀ . Cl ₂ Br ₄ ----	2.075, 13°.8----	" "
Purpureo-rhodium hexchloride. " " --	Rh ₂ (N H ₃) ₁₀ . Cl ₆ ----	2.072, 18°.4 } 2.079, 18° }	Jørgensen. J. P. C. (2), 27, 442.
Purpureo-rhodium hexbromide. " " --	Rh ₂ (N H ₃) ₁₀ . Br ₆ ----	2.643 } 17°.5 - }	Jørgensen. J. P. C. (2), 27, 464.
" " " --	" ----	2.650 } {	
Purpureo-rhodium hexiodide. " " --	Rh ₂ (N H ₃) ₁₀ . I ₆ ----	3.110, 14°.8 }	Jørgensen. J. P. C.
" " " --	" ----	3.120, 16°.2 }	(2), 27, 471.

VIII. INORGANIC OXIDES.

1st. Simple Oxides.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Water*	H ₂ O	1.0000, 4°.07	Standard of comparison.
"	"	.999889, 0°	H ₂ O at 3°.78=1.0. Muncke. Mém. Acad. St. Petersburg, 1831.
"	"	.988433, 50°	
"	"	.958737, 100°	
"	"	.999887, 0°	Stampfer. H ₂ O at 3°.75=1.0°. P. A. 21, 75.
"	"	.992247, 40°	
"	"	.999862, 0°	Despretz. Ann. (2), 70, 5.
"	"	.99988, 0°	Mendelejeff. A. C. P. 119, 1.
"	"	.95903, 95°.8	
"	"	.93078, 130°.8	
"	"	.93123, 131°	
"	"	.93035, 131°.1	
"	"	.90783 } 156°.7	
"	"	.90811 }	
"	"	.90715, 157°	Buff. H ₂ O at 0°=1.0. A. C. P. 4th Supp. 129.
"	"	.95892, 100°	
"	"	.999866, 0°	Rossetti. Ann. (4), 10, 471. Sp. Gr. given for every degree from 0° to 50°.
"	"	1.000000, 4°.07	
"	"	.99975, 10°	
"	"	.99826, 20°	
"	"	.99575, 30°	
"	"	.99238, 40°	
"	"	.98835, 50°	
"	"	.99831, 20°	Bedson and Wil- liams. Ber. 14, 2550.
"	"	.9543, 100°.1	Schiff. Ber. 14, 2763.
"	"	.9585 } 100°.3	Schiff. Ber. 14, 2766.
"	"	.9587 }	
Ice	"	.91812, — 1°	Brunner. H ₂ O at 0°=1.0. P. A. 64, 113.
"	"	.91912, — 10°	
"	"	.92025, — 20°	Playfair and Joule.† M. C. S. 2, 401.
"	"	.9184, m. of 2	
"	"	.9175	Dufour. P. M. (4), 5, 20.
"	"	.918	Duvernoy. P. A. 117, 454.
"	"	.922	
"	"	.91674	Bunsen. Ann. (4), 23, 65.

* For water and ice the table makes no pretense at completeness. Only a few important values are given out of a vast number.

† See Playfair and Joule for older values.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ice	H_2O	.91686, 0°	Petterson. "Properties of water and ice."
Hydrogen dioxide	H_2O_2	1.452	Thénard. Watts' Dict.
Lithium oxide	Li_2O	2.102, 15°	Brauner and Watts. P. M. (5), 11, 60.
Sodium oxide	Na_2O	2.805	Karsten. Schw. J. 65, 394.
Potassium oxide	K_2O	2.656	" "
Silver monoxide	Ag_2O	7.143, 16°.6	Herapath. P. M. 64, 321.
" "	"	7.250	Boullay. Ann. (2), 43, 266.
" "	"	8.2558	Karsten. Schw. J. 65, 394.
" "	"	7.147	Playfair and Joule. M. C. S. 3, 84.
" "	"	7.521, m. of 2	Schröder. Ber. 9, 1888.
Silver dioxide	Ag_2O_2	5.474 (impure)	Mahla. J. 5, 424.
Glucinum oxide	GlO	2.967	Ekeberg. P. M. (1), 14, 346.
" "	"	3.02	} H. Rose. P. A. 74, 433.
" "	"	3.06	
" "	"	3.083, powder	
" "	"	3.09	
" "	"	3.096, 12°, ppt.	
" "	"	3.027, 10°, ignited.	
" "	"	3.021, 9°, cryst.	
" "	"	3.016	Nilson and Pettersson. C. R. 91, 232.
" "	"	3.18, 14°, cryst.	Grandeau. Ann. (6), 8, 193.
Magnesium oxide	MgO	3.674, periclase	Damour. J. 2, 732.
" "	"	3.750	Scacchi. J. P. C. 28, 486.
" "	"	3.642, 12°	Cossa. Ber. 10, 1747.
" "	"	3.200	Karsten. Schw. J. 65, 394.
" "	"	3.644	} H. Rose. P. A. 74, 437.
" "	"	3.650	
" "	"	3.636, cryst.	Ebelmen. J. 4, 15,
" "	"	3.42, amorphous.	Brügelmann. Ber. 13, 1741.
" "	"	3.1932, 0°, calcined at 350°	} Ditte. J. C. S. (2), 9, 870.
" "	"	3.2014, 0°, calcined at 440°	
" "	"	3.2482, 0°, calcined at low redness.	
" "	"	3.5699, 0°, cal. at bright redness.	
" "	"	2.74	} From three different sources. Beckurts. Ber. 14, 2063.
" "	"	3.056	
" "	"	3.69	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Zinc oxide-----	Zn O -----	5.432 -----	Mohs. See Böttger.
" " -----	" -----	5.600 -----	Boullay. Ann. (2), 43, 266.
" " -----	" -----	5.7344 -----	Karsten. Schw. J. 65, 394.
" " -----	" -----	5.6067 -----	} Brooks. P. A. 74, 439.
" " -----	" -----	5.6570 -----	
" " -----	" -----	5.5298, cryst. --	
" " -----	" -----	5.612 -----	W. and T. J. Hera- path. J. C. S. 1, 42.
" " -----	" -----	5.612 -----	Filhol. Ann. (3), 21, 415.
" " -----	" -----	5.782, 15°, cryst	Brügelmann. P. A. (2), 4, 286.
" " -----	" -----	5.47, amor- phous.	Brügelmann. Ber. 13, 1741.
" " Zincite -----	" -----	5.684 -----	Blake. J. 13, 752.
" " Artif. cryst.-----	" -----	5.5—5.6 -----	Gorgeu. B. S. C. 47, 146.
Cadmium oxide -----	Cd O -----	8.183, 16°.5----	Hera- path. P. M. 64, 321.
" " -----	" -----	6.9502 -----	Karsten. Schw. J. 65, 394.
" " Cryst. -----	" -----	8.1108 -----	Werther. J. 5, 390.
Mercurous oxide-----	Hg ₂ O -----	10.69, 16°.5----	Hera- path. P. M. 64, 321.
" " -----	" -----	8.9503 -----	Karsten. Schw. J. 65, 394.
Mercuric oxide-----	Hg O -----	11.074, 17°.5 } -----	} Hera- path. P. M. 64, 321.
" " -----	" -----	11.085, 18°.3 } -----	
" " -----	" -----	11.0 -----	Boullay. Ann. (2), 43, 266.
" " -----	" -----	11.1909 -----	Karsten. Schw. J. 65, 394.
" " -----	" -----	11.29 -----	Leroyer and Dumas. See Böttger.
" " -----	" -----	11.344 -----	Playfair and Joule. M. C. S. 3, 84.
" " -----	" -----	11.136 -----	Playfair and Joule. J. C. S. 1, 137.
Calcium oxide. Lime-----	Ca O -----	3.179 -----	Boullay. Ann. (2), 43, 266.
" " " -----	" -----	3.16105 -----	Karsten. Schw. J. 65, 394.
" " " -----	" -----	3.180 -----	Filhol. Ann. (3), 21, 415.
" " " -----	" -----	3.251, cryst. --	Brügelmann. P. A. (2), 4, 282.
" " " -----	" -----	3.32 " -----	Levallois and Meu- nier. C. R. 90, 1566.
Strontium oxide-----	Sr O -----	3.9321 -----	Karsten. Schw. J. 65, 394.
" " -----	" -----	4.611 -----	Filhol. Ann. (3), 21, 415.
" " -----	" -----	4.750, cryst. --	Brügelmann. P. A. (2), 4, 282.
" " -----	" -----	4.51, amor- phous.	Brügelmann. Ber. 13, 1741.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Barium oxide -----	Ba O -----	4.0 -----	Fourcroy. See Böttger.
“ “ -----	“ -----	4.2583 -----	Tünnermann. See Böttger.
“ “ -----	“ -----	4.7322 -----	Karsten. Schw. J. 65, 394.
“ “ -----	“ -----	4.829 -----	Playfair and Joule, M. C. S. 3, 84.
“ “ -----	“ -----	4.986 -----	
“ “ -----	“ -----	5.456 -----	
“ “ -----	“ -----	5.722, cryst. --	Brügelmann. P. A. (2), 4, 282.
“ “ -----	“ -----	5.32 “ --	Brügelmann. Ber. 13, 1741.
Barium dioxide -----	Ba O ₂ -----	4.958 -----	Playfair and Joule. M. C. S. 3, 84.
Boron trioxide -----	B ₂ O ₃ -----	1.803 -----	Davy. See Böttger.
“ “ -----	“ -----	1.83 -----	Berzelius. “
“ “ -----	“ -----	1.75 -----	Breithaupt. “
“ “ -----	“ -----	1.825, 21°.6 --	Favre and Valson. C. R. 77, 579.
“ “ -----	“ -----	1.8766, 0° -----	Ditte. C. N. 36, 287.
“ “ -----	“ -----	1.8476, 12° -----	
“ “ -----	“ -----	1.6988, 80° -----	
“ “ -----	“ -----	1.848, 14°.4 -----	{ Bedson and Williams. Ber. 14, 2554.
“ “ -----	“ -----	1.853, 15°.8 -----	
“ “ Fused -----	“ -----	1.75 -----	Quincke. P. A. 135, 642.
Aluminum trioxide -----	Al ₂ O ₃ -----	4.152, 4° -----	Royer and Dumas. Quoted by Rose, P. A. 47, 429.
“ “ -----	“ -----	3.944 -----	{ Mohs and Breithaupt. Quoted by Rose.
“ “ -----	“ -----	4.004 -----	
“ “ -----	“ -----	4.154 -----	
“ “ -----	“ -----	3.928, cryst. --	Filhol. Ann. (3), 21, 415.
“ “ -----	“ -----	3.870 -----	Ebelmen. J. 414.
“ “ -----	“ -----	3.899 -----	
“ “ -----	“ -----	3.750 -----	
“ “ -----	“ -----	3.725 -----	{ Heated in wind furn'ce
“ “ -----	“ -----	3.999, ignited in porcelain furnace.	
“ “ -----	“ -----	4.0067, 14°, powdered.	
“ “ -----	“ -----	3.989 -----	{ 13°.5, after ignit'n
“ “ -----	“ -----	4.008 -----	
“ “ -----	“ -----	3.990 -----	Schaffgotsch P. A. 74, 429.
“ “ Artificial cryst. -----	“ -----	3.98, 14° -----	Nilson and Pettersson. C. R. 91, 232.
“ “ Ruby -----	Al ₂ O ₃ -----	3.5311 -----	Grandeau. Ann. (6), 8, 193.
“ “ “ -----	“ -----	3.994, m. of 9 -----	Brisson. P. des C. Schaffgotsch. P. A. 74, 429.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Aluminum trioxide. Ruby	Al_2O_3 -----	3.95, natural } -----	Williams. C. N. 28,
" " " "	" -----	3.7, artificial } -----	101.
" " Sapphire	" -----	3.562 -----	Muschenbroek. See
" " " "	" -----	3.9998 -----	Böttger.
" " " "	" -----	4.0001 -----	Schaffgotsch. P. A.
" " " "	" -----	3.98 -----	74, 429.
" " " "	" -----	3.990 -----	Williams. C. N. 28,
" " " "	" -----	3.899, $15^\circ.5$ } -----	101.
" " Corundum	" -----	3.929 -----	Nilson and Petters-
" " " "	" -----	3.974 -----	son. C. R. 91, 232.
" " " "	" -----	4.022 -----	Schaffgotsch. P. A.
" " " "	" -----	3.992, after } -----	74, 429.
" " " "	" -----	ignition. } -----	Dewille. J. 8, 15.
" " " "	" -----	3.979 } $15^\circ.5$ { -----	Church. Geol. Mag.
" " " "	" -----	4.03 } -----	(2), 2, 320.
Scandium trioxide	Sc_2O_3 -----	3.8 -----	Cleve. C. R. 89, 420.
" " " "	" -----	3.864 -----	Nilson. C. R. 91,
Yttrium trioxide	Yt_2O_3 -----	4.842 -----	118.
" " " "	" -----	5.028, 22° -----	Ekeberg. P. M. 14,
" " " "	" -----	5.046 -----	346.
" " " "	" -----	5.046 -----	Cleve and Hoeglund.
" " " "	" -----	5.046 -----	1873.
" " " "	" -----	5.046 -----	Nilson and Petters-
" " " "	" -----	5.046 -----	son. C. R. 91,
" " " "	" -----	5.046 -----	232.
Indium trioxide	In_2O_3 -----	7.179 -----	" "
Lanthanum trioxide	La_2O_3 -----	5.94 -----	Hermann. J. 14, 192.
" " " "	" -----	5.296, 16° -----	Nordenskiöld. J. 14,
" " " "	" -----	6.53, 17° -----	197.
" " " "	" -----	6.480 -----	Cleve. B. S. C. 21,
" " " "	" -----	6.480 -----	196.
" " " "	" -----	6.480 -----	Nilson and Petters-
" " " "	" -----	6.480 -----	son. C. R. 91, 232.
Didymium trioxide	Di_2O_3 -----	6.64 -----	Hermann. J. 14, 195.
" " " "	" -----	5.825, 14° -----	Nordenskiöld. J. 14,
" " " "	" -----	6.852 -----	197.
" " " "	" -----	6.852 -----	Cleve. J. C. S. (2),
" " " "	" -----	6.950 -----	13, 340.
" " " "	" -----	7.177 } $13^\circ.5$ -----	Nilson and Petters-
" " " "	" -----	7.182 } -----	son. C. R. 91, 232.
Didymium pentoxide	Di_2O_5 -----	5.368, 15° -----	Cleve. U. N. A. 1885.
Samarium trioxide	Sm_2O_3 -----	8.311, 13° } -----	Brauner. Ber. 15,
" " " "	" -----	8.383, 15° } -----	113.
Erbium trioxide	Er_2O_3 -----	8.8 -----	Cleve. U. N. A. 1885.
" " " "	" -----	8.9 -----	Cleve and Hoeglund.
" " " "	" -----	8.640 -----	B. S. C. 18, 195.
" " " "	" -----	8.640 -----	Nilson and Petters-
" " " "	" -----	8.640 -----	son. C. R. 91,
" " " "	" -----	8.640 -----	232.
Ytterbium trioxide	Yb_2O_3 -----	9.175 -----	" "
Carbon dioxide. L.	C O_2 -----	.9, -20° -----	Thilorier. Ann. (2),
" " " "	" -----	.83, 0° -----	60, 427.
" " " "	" -----	.6, $+30^\circ$ -----	" "

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Carbon dioxide. L. -----	C O ₂ -----	.93, 0° -----	Mitchell. B. J. 22, 77.
" " " -----	" -----	.8825, 6°.4 -----	
" " " -----	" -----	.853, 10°.6 -----	
" " " -----	" -----	.7385, 20°.3 -----	
" " " -----	" -----	.9952, —10° -----	
" " " -----	" -----	.9710, —5° -----	D'Andreëff. Ann. (3), 56, 317.
" " " -----	" -----	.9471, 0° -----	
" " " -----	" -----	.9222, +5° -----	
" " " -----	" -----	.8948, 10° -----	
" " " -----	" -----	.8635, 15° -----	
" " " -----	" -----	.8267, 20° -----	
" " " -----	" -----	.7831, 25° -----	
" " " -----	" -----	1.057, —34° -----	
" " " -----	" -----	1.016, —25° -----	
" " " -----	" -----	.966, —11°.5 -----	
" " " -----	" -----	.910, —1°.6 -----	Cailletet and Mathias. C. R. 102, 1202.
" " " -----	" -----	.907, +1°.3 -----	
" " " -----	" -----	.868, 6°.8 -----	
" " " -----	" -----	.840, 11° -----	
" " " -----	" -----	.788, 15°.9 -----	
" " " -----	" -----	.726, 22°.2 -----	Landolt. Ber 17, 311.
" " Solid -----	" -----	1.188 -----	
" " " -----	" -----	1.199 -----	
" " " -----	" -----	1.58—1.6 -----	Dewar. Read at Am. Assoc. in 1884.
Silicon monoxide -----	Si O -----	2.893, 4° -----	Mabery. A. C. J. 9, 15.
Silicon dioxide. Artif. -----	Si O ₂ -----	2.20, 12°.5, m. of 9. -----	Schaffgotsch. P. A. 68, 147.
" " -----	" -----	2.322 -----	{ Ullik. Ber. 11, 2125. From gelatinous silica, ignited.
" " -----	" -----	2.324 -----	
" " Quartz -----	" -----	2.653, cryst. -----	Scheerer.
" " " -----	" -----	2.659, ameth'st -----	
" " " -----	" -----	2.744 " -----	
" " " -----	" -----	2.651, smoky -----	
" " " -----	" -----	2.658 " -----	
" " " -----	" -----	2.651, rose -----	Breithaupt. Schw. J. 68, 411.
" " " -----	" -----	2.653 " -----	
" " " -----	" -----	2.658 " -----	
" " " -----	" -----	2.618, milky -----	
" " " -----	" -----	2.6354 -----	{ Beudant. P. A. 14, 474. Extremes of eleven experiments.
" " " -----	" -----	2.6541 -----	
" " " -----	" -----	2.61 -----	Neumann. P. A. 23, 1.
" " " -----	" -----	2.653, 13°, m. of 5. -----	Schaffgotsch.* P. A. 68, 147.
" " " -----	" -----	2.656, cryst. -----	{ Deville. J. 8, 14.
" " " -----	" -----	2.22, after fusion. -----	
" " " -----	" -----	2.65259, 18° -----	Miller. P. M. (4), 3, 194.

*See the same paper for many determinations of the specific gravity of opaline minerals.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Silicon dioxide. Quartz	Si O ₂	2.6507, 0°	Dibbits. (Rock crystal.) Bei. 5, 81. Calculated from sp. g. determinations by Steinheil, data for expansion of water by Regnault and Kopp, and the expansion of quartz as determined by Pfaff and Fizeau.
" " "	"	2.6502, 5°	
" " "	"	2.6498, 10°	
" " "	"	2.6493, 15°	
" " "	"	2.6488, 20°	
" " "	"	2.6484, 25°	
" " "	"	2.6479, 30°	
" " "	"	2.6460, 50°	
" " "	"	2.6409, 100°	
" " Tridymite	Si O ₂	2.295	Vom Rath. J. 21, 1001.
" " "	"	2.326 } 15°-16°	
" " "	"	2.282, 18°.5	
" " "	"	2.311	G. Rose. Ber. 2, 388.
" " "	"	2.317 } Artif.	
" " "	"	2.373	Hautefeuille. P. M. (5), 6, 78.
" " "	"	2.30, 16°, "	
" " Asmannite	"	2.247	v. Rath. A. J. S. (3), 7, 142.
Titanium dioxide	Ti O ₂	4.18	Klaproth.
" " "	"	3.9311, artif.	Karsten. Schw. J. 65, 394.
" " "	"	4.253, powder	Rose.
" " "	"	4.255, ignited	
" " Rutile	"	4.249	Mohs. See Böttger.
" " "	"	4.244—4.245	Scheerer. P. A. 65, 296.
" " "	"	4.250	Breithaupt.
" " "	"	4.291	
" " "	"	4.420, 0°	Kopp.
" " "	"	4.56	Müller. J. 5, 847.
" " "	"	4.26, artificial.	Ebelmen. J. 4, 15, and J. 12, 14.
" " "	"	4.283	
" " "	"	4.3	Hautefeuille. J. 16, 212.
" " "	"	4.173—4.278	Lasaulx. J. 36, 1840.
" " Brookite	"	4.128	H. Rose.
" " "	"	4.131	
" " "	"	4.165	
" " "	"	4.166	Breithaupt. J. 2, 730.
" " "	"	3.952, arkansite.	
" " "	"	3.892	Rammelsberg. J. 2, 730.
" " "	"	3.949	
" " "	"	4.03, arkansite	Damour. J. 2, 731.
" " "	"	4.083	
" " "	"	4.085	Whitney. J. 2, 731.
" " "	"	4.22	Frödmann. J. 3, 704.
" " "	"	4.20	Beck. J. 3, 704.
" " "	"	4.1, artificial	Hautefeuille. J. 17, 214.
" " Anatase	"	3.857	Vauquelin.
" " "	"	3.826	Mohs. See Böttger.
" " "	"	3.75	Breithaupt.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Titanium dioxide. Anatase	Ti O ₂	3.82	Kobell.
" " "	"	3.890	H. Rose.
" " "	"	3.912	
" " "	"	4.06	Damour. J. 10, 661.
" " "	"	3.7, artificial	Hautefeuille. J. 17, 215.
" " "	"	3.9	
Germanium dioxide	Ge O ₂	4.703, 18°	Winkler. Ber. 19, ref. 654.
Zirconium dioxide	Zr O ₂	4.30	Klaproth. See Böttger.
" " "	"	5.5	Sjögren. J. 6, 349.
" " "	"	4.9	Berlin. J. 6, 350.
" " "	"	5.49	Hermann. J. 19, 191.
" " "	"	5.742	Nordenskiöld. P. A. 114, 626.
" " "	"	5.710	
" " "	"	5.624	
" " "	"	5.42, cryst.	Knop. A. C. P. 159, 52.
" " "	"	5.52, noria.	Knop. A. C. P. 159, 53.
" " "	"	5.850	Nilson and Petersson. C. R. 91, 232.
Tin monoxide	Sn O	6.666, 16°.5	Herapath. P. M. 64, 321.
" " "	"	5.9797, 0°, olive	Ditte. Ann. (5), 27, 169. All crystalline. Prepared by different methods.
" " "	"	6.1083, 0°, dark green.	
" " "	"	6.600, 0°, black	
" " "	"	6.3254, 0°, dark violet.	
" " "	"	6.4465, 0°, ditto heated to 300°.	
Tin dioxide	Sn O ₂	6.96	Mohs. See Böttger.
" " "	"	6.639, 16°.5	Herapath. P. M. 64, 321.
" " "	"	6.90	Boullay. Ann. (2), 43, 266.
" " "	"	6.892	Breithaupt.
" " "	"	7.180	
" " "	"	6.952	Neumann. P. A. 23, 1.
" " "	"	6.831, 0°	Kopp.
" " Artif. cryst.	"	6.72	Daubrée. J. 12, 11.
" " "	"	6.849	H. Rose.
" " "	"	6.978	
" " "	"	6.7122, 4°	Playfair and Joule. J. C. S. 1, 137.
" " "	"	6.753	Mallet. J. 3, 705.
" " "	"	6.862	Bergemann. J. 10, 661.
" " "	"	6.8432	Cassiterite from Bolivia. Forbes. P. M. (4), 30, 139.
" " "	"	6.8439	
" " "	"	6.704, 15°.5, yellow.	
" " "	"	6.7021, 15°.5, black.	Leeds.
" " Artif. cryst.	"	6.019	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Tin dioxide. Artif. cryst.	Sn O_2	6.70	Levy and Bourgeois. Bei. 6, 531.
Lead hemioxide	$\text{Pb}_2 \text{O}$	9.772	Playfair and Joule. M. C. S. 3, 83.
Lead monoxide	Pb O	9.277, $17^\circ.5$	Herapath. P. M. 64, 321.
" "	"	9.500	Boullay. See Böttger.
" "	"	9.2092	Karsten. Schw. J. 65, 394.
" "	"	9.250	Playfair and Joule. M. C. S. 3, 84.
" "	"	9.361	Filhol. Ann. (3), 21, 415.
" "	"	9.3634, 4°	Playfair and Joule. J. C. S. 1, 137.
" "	"	8.02, cryst.	Grailich. J. 11, 186.
" "	"	9.1699, greenish yellow.	Ditte. C. R. 94, 1310. Samples differently prepared by boiling Pb (O H)_2 with K O H .
" "	"	9.2089, yellow	
" "	"	9.8835, brownish yellow.	
" "	"	9.5605, greenish gray.	
" "	"	9.4223, dark green.	
" "	"	9.3757	
" "	"	9.29, 15° , yellow cryst.	
" "	"	9.126, 15° , red cryst.	
" "	"	9.125, 14° , red cryst.	
" "	"	9.09, 15° , red pulv.	
" "	"	8.74, 14° , red, very pure.	Geuther. A. C. P. 219, 60-61.
Lead dioxide	Pb O_2	8.902, $16^\circ.5$	Herapath. P. M. 64, 321.
" "	"	8.933	Karsten. Schw. J. 65, 394.
" "	"	8.756	Playfair and Joule. M. C. S. 3, 84.
" "	"	8.897	
" "	"	9.045	
Minium	$\text{Pb}_3 \text{O}_4$	8.94	Wernicke. J. C. S. (2), 9, 306.
"	"	9.096, 15°	Muschenbroek. Watts' Dict.
"	"	9.190	Herapath. P. M. 64, 321.
"	"	8.62	Boullay. Ann. (2), 43, 266.
"	"		Karsten. Schw. J. 65, 394.
Cerium dioxide	Ce O_2	5.6059	" "
" "	"	6.00	Hermann. J. P. C. 92, 113.
" "	"	6.93	Nordenskiöld. J. 14, 184.
" "	"	6.94	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Cerium dioxide-----	Ce O ₂ -----	7.09, 14°.5, } cryst.	Nordenskiöld. J. 14, 184.
" "-----	"-----	6.739-----	Nilson and Peters- son. C. R. 91, 232.
Thorium dioxide*-----	Th O ₂ -----	9.402-----	Berzelius. P. A. 16, 385.
" "-----	"-----	9.21-----	Nordenskiöld and Chydenius. J. 13, 134.
" "-----	"-----	9.077-----	Chydenius. J. 16, 194.
" "-----	"-----	9.200-----	
" "-----	"-----	9.861-----	Nilson and Petters- son. C. R. 91, 232.
" "-----	"-----	10.2199 } 17°	Nilson. Ber. 15, 2536.
" "-----	"-----	10.2206 }	
" "-----	"-----	9.876, 15°-----	Troost and Ouvrard. C. R. 102, 1422.
Nitrogen monoxide. L.---	N ₂ O-----	.9756, -5°-----	D'Andréff. Ann. (3), 56, 317.
" "-----	"-----	.9370, 0°-----	
" "-----	"-----	.9177, +5°-----	
" "-----	"-----	.8964, 10°-----	
" "-----	"-----	.8704, 15°-----	
" "-----	"-----	.8365, 20°-----	
" "-----	"-----	.9004, 0°-----	Will. C. N. 28, 170.
" "-----	"-----	.9434-----	Wroblevsky. C. R. 97, 166.
" "-----	"-----	1.002, -20°.6-----	Cailletet and Ma- thias. C. R. 102, 1202.
" "-----	"-----	.952, -11°.6-----	
" "-----	"-----	.930, -5°.5-----	
" "-----	"-----	.912, -2°.2-----	
" "-----	"-----	.849, +6°.6-----	
" "-----	"-----	.810, 11°.7-----	
" "-----	"-----	.758, 19°.8-----	
" "-----	"-----	.698, 23°.7-----	
Nitrogen tetroxide. L.---	N ₂ O ₄ -----	1.451-----	Dulong. Schw. J. 18, 177.
" "-----	"-----	1.42-----	Mitscherlich. Schw. J. 63, 109.
" "-----	"-----	1.4903, 0°-----	Thorpe. J. C. S. 37, 224.
" "-----	"-----	1.43958, 21°.64-----	
Phosphorus pentoxide-----	P ₂ O ₅ -----	2.387-----	Brisson. P. des C.
Vanadium dioxide-----	V ₂ O ₂ -----	3.64, 20°-----	Schafarik. J. P. C. 76, 142.
Vanadium trioxide-----	V ₂ O ₃ -----	4.72, 16°, m. of 3.	Schafarik. J. P. C. 90, 12.
Vanadium pentoxide-----	V ₂ O ₅ -----	3.472 } 20° {	Schafarik. J. P. C. 76, 142.
" "-----	"-----	3.510 }	
" "-----	"-----	3.35-----	J. J. Watts. Roscoe and Schorlem- mer's Treatise.
Arsenic trioxide-----	As ₂ O ₃ -----	3.698-----	LeRoyer and Dumas. Gm. H. 1, 69.
" "-----	"-----	3.690 }	Leonhard.
" "-----	"-----	3.710 }	

* For this substance Nilson's determination is the only one of value.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Arsenic trioxide	As_2O_3	3.695, octahedral.	} Guibourt. B. J. 7, 128.
" "	"	3.7385, amorphous.	
" "	"	3.729, $17^\circ.2$	Herapath. P. M. 64, 321.
" "	"	3.7026	} Karsten. Schw. J. 65, 394.
" "	"	3.7202	
" "	"	3.798	Taylor. Gm. H.
" "	"	3.884	Filhol. Ann. (3), 21, 415.
" "	"	3.85, native	Claudet. J. 21, 230.
Arsenic pentoxide	As_2O_5	3.7342	Karsten. Schw. J. 65, 394.
" "	"	3.985	} Playfair and Joule. M. C. S. 3, 83.
" "	"	4.023	
" "	"	4.250	Filhol. Ann. (3), 21, 415.
Antimony trioxide	Sb_2O_3	5.566	Mohs. See Böttger.
" "	"	5.778	Boullay. Ann. (2), 43, 266.
" "	"	6.6952	Karsten. Schw. J. 65, 394.
" "	"	5.251	Playfair and Joule. M. C. S. 3, 83.
" "	"	5.11, octahedral.	} Terreil. J. P. C. 98, 154.
" "	"	3.72, prismatic.	
Valentinite	"	5.566	Dana's Mineralogy.
Senarmontite	"	5.22—5.30	" "
Antimony tetroxide	Sb_2O_4	4.074	Playfair and Joule. M. C. S. 3, 83.
Cervantite	"	4.084	Dana's Mineralogy.
Antimony pentoxide	Sb_2O_5	6.525	Boullay. Ann. (2), 43, 266.
" "	"	3.779	Playfair and Joule. M. C. S. 3, 83.
Bismuth trioxide	Bi_2O_3	8.211, $18^\circ.3$	Herapath. P. M. 64, 321.
" "	"	8.449	Le Royer and Dumas. See Böttger.
" "	"	8.1735	Karsten. Schw. J. 65, 394.
" "	"	8.079	Playfair and Joule. M. C. S. 3, 82.
" "	"	8.855	} Schröder. Dm. 1873.
" "	"	8.868	
Bismuth tetroxide	Bi_2O_4	5.6, 20°	Muir, Hoffmeister, and Robbs. J. C. S. 39, 32.
Bismuth pentoxide	Bi_2O_5	5.917	} 15° { Brauner and Watts. P. M. (5), 11, 60.
" "	"	5.919	
" "	"	5.1, 20°	
Columbium pentoxide	Cb_2O_5	4.56	} Extremes of several determinations. { H. Rose. J. 1, 405.
" "	"	5.26	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Columbium pentoxide	Cb_2O_5	6.140	H. Rose. J. 12, 158. For full details as to modes of prep- aration, charac- ter of samples, etc., see the orig- inal paper.
"	"	6.146	
"	"	6.48, ditto, ig- nited.	
"	"	5.83, more strongly ig- nited.	
"	"	5.90	
"	"	5.98	
"	"	5.706	
"	"	6.239	
"	"	6.725, ditto, ig- nited.	
"	"	5.79, more strongly ig- nited.	
"	"	5.51	
"	"	5.52	
"	"	4.56	
"	"	6.54	
"	"	5.20	
"	"	5.48	Nordenskiöld. J. 14, 209.
"	"	4.37	
"	"	4.46	
"	"	4.51	
"	"	4.53	
"	"	5.00	Hermann. J. 18, 209. Knop. A. C. P. 159, 36.
"	"	4.31	
Tantalum pentoxide	Ta_2O_5	7.03	H. Rose. J. 1, 404.
"	"	8.26	
"	"	7.055	
"	"	7.065	
"	"	7.986, ditto, ig- nited.	
"	"	7.028	
"	"	7.280	
"	"	7.284, ditto, crystalline.	
"	"	7.994, ditto, ignited.	
"	"	7.652, ditto, more strong- ly.	
"	"	8.257, ditto, in porcelain fur- nace.	
"	"	7.00	
"	"	7.35, from Ta Cl_5 , ignited.	
"	"	8.01, from NH_4 salt.	
			Marignac. J. P. C. 99, 33.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Tantalum pentoxide	$Ta_2 O_5$	7.60 } From K	{ Marignac. J. P. C. 99, 33. Oesten. P. A. 100, 342.
" "	"	7.64 } salt.	
" "	"	7.234	
" "	"	7.253	
Sulphur dioxide. L.	$S O_2$	1.42	Faraday. P. T. 1823, 189.
" "	"	1.45	Bussy. P. A. 1, 237.
" "	"	1.4911, $-20^\circ.5$	{ D'Andréeff. Ann. (3), 56, 317.
" "	"	1.4609, $-9^\circ.9$	
" "	"	1.4384, $-2^\circ.08$	
" "	"	1.4318, $-0^\circ.25$	
" "	"	1.4252, $+2^\circ.8$	
" "	"	1.4205, $4^\circ.51$	
" "	"	1.4102, $8^\circ.27$	
" "	"	1.4017, $11^\circ.5$	
" "	"	1.3887, $16^\circ.43$	
" "	"	1.3769, $20^\circ.63$	
" "	"	1.3673, $23^\circ.91$	
" "	"	1.3587, $26^\circ.9$	
" "	"	1.3513, $29^\circ.57$	
" "	"	1.3415, $32^\circ.96$	
" "	"	1.3350, $35^\circ.29$	
" "	"	1.3258, $38^\circ.65$	
" "	"	1.4338, 0°	
" "	"	1.3757, $21^\circ.7$	
" "	"	1.3374, $35^\circ.2$	
" "	"	1.2872, 52°	
" "	"	1.2523, 62°	{ Cailletet and Ma- thias. C. R. 104, 1563. 156° is the critical tempera- ture.
" "	"	1.1845, $82^\circ.4$	
" "	"	1.1041, $102^\circ.4$	
" "	"	1.0166, $120^\circ.45$	
" "	"	.9560, $130^\circ.3$	
" "	"	.8690, $140^\circ.8$	
" "	"	.8065, $146^\circ.6$	
" "	"	.7317, $151^\circ.75$	
" "	"	.6706, $154^\circ.3$	
" "	"	.6370, $155^\circ.05$	
" "	"	.52, 156°	
Sulphur trioxide. S.	$S O_3$	1.9546, 13°	Morveau. Watts' Dict.
" " "	"	1.975	Baumgartner.
" " L.	"	1.97, 20°	Bussy. Ann. (2), 26, 411.
" " S.	"	1.92118	{ Buff. A. C. P. 4th Supp., 129.
" " "	"	1.90915	
" " "	"	1.90814	
" " L.	"	1.81958	
" " "	"	1.8105	
" " "	"	1.8101	
" " S.	"	1.940, 16°	Weber. P. A. 159, 318.
" " "	"	1.9365, 20°	Nasini. Ber. 15, 2885.
Selenium dioxide	$Se O_2$	3.9538	Clausnizer. A. C. P. 196, 265.
Tellurium dioxide	$Te O_2$	5.93, 20°	Schafarik. J. P. C. 90, 12.
" "	"	5.7559, $12^\circ.5$	{ F. W. Clarke. A. J. S. (3), 14, 285.
" "	"	5.7841, 14°	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Tellurium dioxide. Octa-	Te O ₂	5.65	Klein and Morel. C. R. 100, 1140.
" " " "	"	5.67	
" " " "	"	5.68	
" " Ortho-	"	5.88	
rhombic.	"	5.90	
" " " "	"	5.91	
" " Calcined	"	5.68, 0°	F. W. Clarke. A. J. S. (3), 14, 286.
Tellurium trioxide	Te O ₃	5.0704, 14°.5	
" " "	"	5.0794, 11°	
" " "	"	5.1118, 11°	
Chromic oxide	Cr ₂ O ₃	5.21, cryst.	Wöhler. See Bött-
" " "	"	4.909	ger.
" " "	"	6.2, cryst.	Playfair and Joule.
" " "	"	5.010	M. C. S. 3, 82.
Chromic chromate	Cr ₅ O ₉	4.0, 10°	Schiff. J. 11, 161.
Chromium trioxide	Cr O ₃	2.676, m. of 2	Schröder. P. A. 106, 226.
" " "	"	2.737, 14°, cryst	Geuther. J. 14, 242.
" " "	"	2.629, 14°, after	Playfair and Joule.
" " "	"	fusion.	M. C. S. *2, 448.
" " "	"	2.819, 20°	} Ehlers. B. D. Z.
" " "	"	2.775	
" " "	"	2.804	
Molybdenum dioxide	Mo O ₂	5.67	Schafarik. J. P. C. 90, 12.
" " "	"	6.44, 16°	Zettnow. P. A. 143, 474.
Molybdenum trioxide	Mo O ₃	3.460	Bucholz. N. J. 20, 121.
" " "	"	3.49	Mauro and Panebi-
" " "	"	4.49	anco. Ber. 15, 527.
" " "	"	4.50	Thomson. See Bött-
" " "	"	4.39, 21°, cryst.	ger.
Tungsten dioxide	W O ₂	12.1109	Berzelius. " "
Tungsten trioxide	W O ₃	6.12	{ Weisbach. Dana's Min.
" " "	"	5.274, 16°.5	
" " "	"	7.1396	Schafarik. J. P. C. 90, 12.
" " "	"	6.302	Karsten. Schw. J. 65, 394.
" " "	"	6.384	{ Nordenskiöld. J. 14, 214.
" " "	"	7.16, amor-	
" " "	"	phous.	Zettnow. J. 20, 216.
" " "	"	7.232, 17°,	
" " "	"	cryst.	
Uranous oxide	U O ₂	10.15	Ebelmen. J. P. C. 27, 385.
Uranoso-urancic oxide	U ₃ O ₈	7.1932	Karsten. Schw. J. 65, 394.
" " "	"	7.31	Ebelmen. J. P. C. 27, 385.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Uranic oxide-----	$U O_3$ -----	5.02 } two {	Brauner and Watts. P. M. (5), 11, 60.
" " -----	" -----	5.26 } lots. {	
Chlorine trioxide. L-----	$Cl_2 O_3$ -----	1.3298 } 0° {	Brandau. Z. C. 13, 47.
" " "-----	" -----	1.387 } {	
Iodine pentoxide -----	$I_2 O_5$ -----	4.250 -----	Filhol. Ann. (3), 21, 415.
" " -----	" -----	4.7987, 9° -----	Kammerer. P. A. 138, 401.
" " -----	" -----	4.487, 0° -----	Ditte. Z. C. 13, 303.
" " -----	" -----	5.037, 0° -----	Ditte. Ann. (4), 21, 10.
" " -----	" -----	5.020, 51° -----	
Manganous oxide-----	$Mn O$ -----	4.7264, 17° -----	Herapath. P. M. 64, 321.
" " -----	" -----	5.38 -----	Playfair and Joule. M. C. S. 3, 80.
" " -----	" -----	5.091 -----	Rammelsberg. J. 18, 878.
" " Mangan- osite.	" -----	5.18 -----	Blomstrand. J. 28, 1209.
" " -----	" -----	5.010, 4° -----	Veley. J. C. S. 1882, 65.
Manganoso-manganic ox- ide. " " "	$Mn_3 O_4$ -----	4.746 ----- } {	Playfair and Joule. M. C. S. 3, 80.
" " "	" -----	4.653 ----- } {	
" " "	" -----	4.325 -----	Playfair and Joule. J. C. S. 1, 137.
" " "	" -----	4.718, artif. } {	Rammelsberg. J. 18, 878.
" " "	" -----	4.856, native } {	
" " "	" -----	4.80, artificial	Gorceu. C. R. 96, 1145.
Manganic oxide -----	$Mn_2 O_3$ -----	4.82, braunite-----	Haidinger. Gm. H.
" " -----	" -----	4.568 } artif. {	Playfair and Joule. M. C. S. 3, 80.
" " -----	" -----	4.619 } {	
" " -----	" -----	4.325, artif.-----	Rammelsberg. J. 18, 878.
" " -----	" -----	4.752, braun- ite.	
Manganese dioxide -----	$Mn O_2$ -----	4.819, pyrolusite	Turner. See Böttger.
" " -----	" -----	5.026 " -----	Rammelsberg. J. 18, 878.
" " -----	" -----	4.838 " } {	Breithaupt. Dana's Min.
" " -----	" -----	4.880 " } {	
" " -----	" -----	4.826 " -----	Pisani. Dana's Min.
" " -----	" -----	4.965 } poli- {	Dana and Penfield. A. J. S. (3), 35, 246.
" " -----	" -----	5.040 } anite. {	
Ferroso-ferric oxide-----	$Fe_3 O_4$ -----	5.094 -----	Mohs. See Böttger.
" " "-----	" -----	4.960 -----	Gerolt. " "
" " "-----	" -----	4.900 -----	Leonhard. See Bött- ger.
" " "-----	" -----	5.200 -----	
" " "-----	" -----	5.300, 16°.5-----	Herapath. P. M. 64, 321.
" " "-----	" -----	5.400 -----	Boullay. Ann. (2), 43, 266.
" " "-----	" -----	5.480 -----	
" " "-----	" -----	5.168 } cryst. {	Kenngott. Dana's Min.
" " "-----	" -----	5.180 } mag- netite.	
" " "-----	" -----	5.453 -----	Playfair and Joule. M. C. S. 3, 81.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ferroso-ferric oxide	$\text{Fe}_3 \text{O}_4$	5.12, 0°, mag- netite.	Kopp.
" " "	"	5.106	Rammelsberg.
" " "	"	5.148	
" " "	"	5.185	
" " "	"	4.86	} two al- lotropic varieties
" " "	"	5.00	
" " "	"	5.09	
" " "	"	5.21	} artif. { cryst. {
" " "	"	5.25	
Ferric oxide	$\text{Fe}_2 \text{O}_3$	5.251	Mohs. See Böttger.
" " "	"	5.261	Breithaupt.
" " "	"	5.959, 16°.5, ppt.	Herapath. P. M. 64, 321.
" " "	"	5.225	Boullay. Ann. (2), 43, 266.
" " "	"	5.079, native	Neumann. P. A. 23, 1.
" " "	"	5.121, 12°.5	Kopp.
" " "	"	4.679	} Playfair and Joule. M. C. S. 3, 80.
" " "	"	5.135, ignit'd	
" " "	"	5.241	} native
" " "	"	5.283	
" " "	"	5.191	} " G. Rose.
" " "	"	5.214	
" " "	"	5.230	
" " "	"	5.169, ppt.	} H. Rose. P. A. 74, 440.
" " "	"	5.037, ignited	
" " "	"	3.95, yellow	Tommasi. Les Mon- des, 1879.
Nickelous oxide	Ni O	5.597	Playfair and Joule. M. C. S. 3, 81.
" " "	"	5.745, furnace product.	} Genth. J. 1, 444.
" " "	"	6.605, cryst.	
" " "	"	6.398	Bergemann. J. 11, 683.
" " "	"	6.661	Rammelsberg. J. 2, 282.
" " "	"	6.8, cryst.	Ebelmen. J. 4, 16.
Nickelic oxide	$\text{Ni}_2 \text{O}_3$	4.846, 16°.5	Herapath. P. M. 64, 321.
" " "	"	4.814	Playfair and Joule. M. C. S. 3, 81.
Cobaltous oxide	Co O	5.597	} " "
" " "	"	5.750, ignited	
Cobaltoso-cobaltic oxide	$\text{Co}_3 \text{O}_4$	5.833	} Rammelsberg. J. 2, 282.
" " "	"	6.296	
Cobaltic oxide	$\text{Co}_2 \text{O}_3$	5.322, 16°.5	Herapath. P. M. 64, 321.
" " "	"	5.600	Boullay. Gm. H. 1, 69.
" " "	"	4.814	Playfair and Joule. M. C. S. 3, 81.
Cuprous oxide	$\text{Cu}_2 \text{O}$	6.052	} 16°.5 { Herapath. P. M. 64, 321.
" " "	"	6.093	
" " "	"	5.751	
			Karsten. Schw. J. 65, 394.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Cuprous oxide -----	Cu_2O -----	5.75 -----	Leroyer and Dumas. See Böttger.
“ “ -----	“ -----	5.746 -----	Playfair and Joule. M. C. S. 3, 82.
“ “ -----	“ -----	5.300 -----	} Persoz. J. P. C. 47, 84.
“ “ -----	“ -----	5.342 -----	
“ “ -----	“ -----	5.375 -----	
Cupric oxide -----	Cu O -----	6.401, 16°.5 -----	Herapath. P. M. 64, 321.
“ “ -----	“ -----	6.130 -----	Boullay. Ann. (2), 43, 266.
“ “ -----	“ -----	6.4304 -----	Karsten. Schw. J. 65, 394.
“ “ -----	“ -----	5.90 -----	} Playfair and Joule. M. C. S. 3, 82.
“ “ -----	“ -----	6.414, ignit'd } -----	
“ “ -----	“ -----	6.322 -----	
“ “ -----	“ -----	6.130 -----	} Persoz. J. P. C. 47, 84.
“ “ -----	“ -----	6.225 -----	
“ “ -----	“ -----	6.400 -----	
“ “ -----	“ -----	6.451, furnace product.	Jenzsch. J. 12, 214.
“ “ -----	“ -----	6.400 -----	Hampe. Z. C. 13, 363.
“ “ -----	“ -----	6.25, melaco- nite.	Whitney. J. 2, 728.
“ “ -----	“ -----	5.952 “	Rammelsberg. P. A. 80, 287.
Ruthenium dioxide -----	Ru O_2 -----	7.2 -----	Deville and Debray. J. 12, 236.

2d. Double and Triple Oxides.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium uranium oxide -----	$\text{Na}_2\text{U}_3\text{O}_{10}$ -----	6.912 -----	Drenkmann. J. 14, 257.
Delafossite -----	$\text{Cu}'_2\text{Fe}'''_2\text{O}_3$ -----	5.07, 25° -----	Friedel. C. R. 77, 211.
Spinel -----	$\text{Mg Al}_2\text{O}_4$ -----	3.452, artif. -----	Ebelmen. J. 4, 12.
“ -----	“ -----	3.48, natural } -----	} Breithaupt.
“ -----	“ -----	3.52 “ -----	
“ -----	“ -----	3.523 “ -----	Haidinger. Dana's Min.
“ -----	“ -----	3.631 } 15°.5, -----	{ Church. Geol. Mag. (2), 2, 320.
“ -----	“ -----	3.715 } nat. -----	
“ -----	“ -----	3.77 -----	
Gahnite -----	$\text{Zn Al}_2\text{O}_4$ -----	4.580, artif. -----	Ebelmen. J. 4, 13.
“ -----	“ -----	4.317 } -----	} G. Rose.
“ -----	“ -----	4.589 } -----	
“ -----	“ -----	4.89 -----	} Brush. A. J. S. (3), 1, 28.
“ -----	“ -----	4.91 -----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Gahnite -----	$\text{Zn Al}_2 \text{O}_4$ -----	4.576 -----	Genth and Keller. J. 36, 1843.
“ Furnace product. -----	“ -----	4.49—4.52 -----	Schulze and Stelzner. Z. K. M. 7, 603.
Hercynite -----	$\text{Fe}'' \text{Al}_2 \text{O}_4$ -----	3.91 } -----	Zippe. Dana's Min.
“ -----	“ -----	3.95 } -----	
Chrysoberyl -----	$\text{Gl Al}_2 \text{O}_4$ -----	3.759, artif. -----	Ebelmen. J. 4, 13.
“ -----	“ -----	3.597 -----	Rose. Dana's Min. From three localities.
“ -----	“ -----	3.689 -----	
“ -----	“ -----	3.734 -----	
“ -----	“ -----	3.835 -----	Kokscharof. J. 14, 976, and J. 15, 715.
“ Alexandrite -----	“ -----	3.644 -----	
“ -----	“ -----	3.734 -----	Nilson and Pettersson. C. R. 91, 232.
“ -----	“ -----	3.700 } -----	{ Church. Geol. Mag. (2), 2, 320.
“ -----	“ -----	3.860 } -----	
Calcium iron oxide -----	$\text{Ca Fe}'''_2 \text{O}_4$ -----	4.693 -----	Percy. P. M. (4), 45, 455.
Magnesioferrite -----	$\text{Mg Fe}'''_2 \text{O}_4$ -----	4.568 -----	Rammelsberg. J. 12, 776.
“ -----	“ -----	4.611 -----	
“ -----	“ -----	4.638 -----	
Hetaerolite -----	$\text{Zn Mn}_2 \text{O}_4$ -----	4.933 -----	Moore. J. C. S. 36, 17.
Zinc iron oxide -----	$\text{Zn Fe}'''_2 \text{O}_4$ -----	5.132 cryst. -----	Ebelmen. J. 4, 13.
“ “ “ -----	“ -----	5.33 “ -----	Gorgeu. B. S. C. 47, 372.
Zinc chromium oxide -----	$\text{Zn Cr}_2 \text{O}_4$ -----	5.309 “ -----	Ebelmen. J. 4, 13.
Manganese chromium oxide. -----	$\text{Mn Cr}_2 \text{O}_4$ -----	4.87 “ -----	“ “
Chromite -----	$\text{Fe}'' \text{Cr}_2 \text{O}_4$ -----	4.321 -----	Thomson. Dana's Min.
“ -----	“ -----	4.498 } -----	Dana's Mineralogy.
“ -----	“ -----	4.568 } -----	
Jacobsite -----	$\text{Mg Fe}'''_2 \text{O}_4 \cdot 2 \text{Mn}$ $\text{Fe}'''_2 \text{O}_4$ -----	4.75, 16° -----	Damour. C. R. 69, 168.
Chrompicotite -----	$2 \text{Fe}'' \text{Al}_2 \text{O}_4 \cdot 3 \text{Mg}$ $\text{Cr}_2 \text{O}_4$ -----	4.115, 20° -----	Petersen. J. P. C. 106, 137.

IX. INORGANIC SULPHIDES.

1st. Simple Sulphides.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Hydrogen monosulphide -----	$\text{H}_2 \text{S}$ -----	a .9, 1 -----	Faraday. Gm. H. 2, 197.
“ “ -----	“ -----	.91, 18°.5 -----	Bleekrode. P. R. S. 37, 355.
Hydrogen persulphide -----	$\text{H}_2 \text{S}_2$ or $\text{H}_2 \text{S}_3$? -----	1.7342 -----	Ramsay. J. C. S. 27, 860.
Sodium sulphide -----	$\text{Na}_2 \text{S}$ -----	2.471 -----	Filhol. Ann. (3), 21, 415.
Potassium sulphide -----	$\text{K}_2 \text{S}$ -----	2.130 -----	“ “

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Silver sulphide -----	Ag_2S -----	6.8501, artif.---	Karsten. Schw. J. 65, 394.
“ “ Argentite -----	“ -----	7.269 } -----	Dauber. J. 13, 748.
“ “ “ -----	“ -----	7.317 } -----	
“ “ Acanthite -----	“ -----	7.31 } -----	Kenngott. J. 8, 908.
“ “ “ -----	“ -----	7.36 } -----	
“ “ “ -----	“ -----	7.164 } ex-	Dauber. J. 13, 748.
“ “ “ -----	“ -----	7.326 } tremes.	
“ “ Daleminzite -----	“ -----	7.02 -----	Breithaupt. J. 15, 709.
Thallium sulphide -----	Tl_2S -----	8.00 -----	Lamy. J. 15, 185.
Oldhamite -----	Ca S . (Impure)-----	2.58 -----	Maskelyne. P. T. 1870, 196.
Zinc sulphide -----	Zn S -----	3.9235 -----	Karsten. Schw. J. 65, 394.
“ “ Blende -----	“ -----	4.060 -----	Neumann. P. A. 23, 1.
“ “ “ -----	“ -----	4.063 -----	Henry. J. 4, 756.
“ “ “ -----	“ -----	4.07 -----	Kuhlmann. J. 9, 832.
“ “ “ -----	“ -----	4.05 -----	Tschermak. S. W. A. 45, 603.
“ “ “ -----	“ -----	4.033 -----	Genth. Am. Phil. Soc. 1882.
Cadmium sulphide -----	Cd S -----	4.5, artificial--	Schüler. J. 6, 367.
“ “ -----	“ -----	4.5 “ --	Söchting. Dana's Min.
“ “ Greenockite -----	“ -----	4.605 -----	Karsten. Schw. J. 65, 394.
“ “ “ -----	“ -----	4.908 -----	Breithaupt. Watts' Dict.
“ “ “ -----	“ -----	4.80 -----	Brooke. P. A. 51, 274.
Mercuric sulphide -----	Hg S -----	8.124 -----	Boullay. Ann. (2), 43, 266.
“ “ -----	“ -----	8.0602 -----	Karsten. Schw. J. 65, 394.
“ “ -----	“ -----	8.090, cinna-	Moore. J. P. C. (2), 2, 319.
“ “ -----	“ -----	bar. -----	
“ “ -----	“ -----	7.701 } natural,	
“ “ -----	“ -----	7.748 } amor-	
“ “ -----	“ -----	phous. -----	Penfield. A. J. S. (3), 29, 453.
“ “ -----	“ -----	7.552, artif. -----	
“ “ -----	“ -----	7.81, metacin-	Sidot. C. R. 81, 33.
“ “ -----	“ -----	nabar. -----	
Carbon monosulphide -----	C S -----	1.66, s. -----	Berzelius and Mar-
Carbon disulphide -----	C S_2 -----	1.272 -----	cet. Schw. J. 9, 284.
“ “ -----	“ -----	1.263 -----	Cluzel. Gm. H.
“ “ -----	“ -----	1.2693, 15°-1--	Gay Lussac.
“ “ -----	“ -----	1.265 -----	Couërbe. Ann. (2), 61, 232.
“ “ -----	“ -----	1.2823, 5°-10°	Regnault. P. A. 62, 50.
“ “ -----	“ -----	1.2750, 10°-15°	
“ “ -----	“ -----	1.2676, 15°-20°	
“ “ -----	“ -----	1.29312, 0° ---	
			Pierre. C. R. 27, 213.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Carbon disulphide	C S ₂	1.29858, 0°	} H. L. Buff. A. C. P. 4th Supp., 129.
" "	"	1.27904, 10°	
" "	"	1.26652, 17°	
" "	"	1.227431, 46°	
" "	"	1.2661, 20°	
" "	"	1.2665, 16°.06	Haagen. P. A. 131, 117.
" "	"	1.2176, 43°	Winkelmann. P. A. 150, 592.
" "	"	1.29215, 0°	} Ramsay. J. C. S. 35, 463.
" "	"	1.22242, 46°.04	
" "	"	1.2233 } 47°	} Thorpe. J. C. S. 37, 363.
" "	"	1.2234 } 47°	
" "	"	1.2634, 20°	Schiff. Ber. 14, 2767.
" "	"	1.266, 15°.2	Nasini. Ber. 15, 2883.
" "	"	1.26569, 17°.86	} Friedburg. C. N. 47, 52.
" "	"	1.26446, 18°.58	
" "	"	1.25031, 28°.21	
" "	"	1.23863, 35°.96	
" "	"	1.2233, 46°.5	Also values for other t°s. Dreck- er. P. A. (2), 20, 870.
Tin monosulphide	Sn S	4.8523	Schiff. Ber. 19, 560.
" "	"	5.267	Karsten. Schw. J. 65, 394.
" "	"	4.973	Boullay. Ann. (2), 43, 266.
" "	"	5.0802, 0°	Schneider. J. 8, 396.
Tin disulphide	Sn S ₂	4.415	Ditte. C. R. 96, 1791.
" "	"	4.600	Boullay. Ann. (2), 43, 266.
Lead sulphide	Pb S	7.5052, artif.	Karsten. Schw. J. 65, 394.
" " Galena	"	7.539	" "
" "	"	6.9238, 4°, pulv	Breithaupt. J. P. C. 11, 151.
" " Galena	"	7.568	Playfair and Joule. J. C. S. 1, 137.
" " "	"	7.51	Neumann. P. A. 23, 1.
" "	"	6.77, artificial	Tschermak. S. W. A. 45, 603.
Lead sesquisulphide	Pb ₂ S ₃	6.335	Schneider. J. P. C. (2), 2, 91.
Cerium sulphide	Ce ₂ S ₃	5.1	Playfair and Joule. M. C. S. 3, 89.
Thorium sulphide	Th S ₂	8.29	Didier. C. R. 100, 1461.
Nitrogen sulphide	N S	2.22, 15°	Chydenius. J. 16, 195.
" "	"	2.1166, 15°	Berthelot and Vi- eille. Ber. 14, 1558.
Phosphorus monosulphide	P S	1.8	Michaelis. Z. C. 13, 460.
Phosphorus hexsulphide	P S ₆	2.02	Dupré. J. P. C. 21, 253.
Tetraphosphorus trisulphide.	P ₄ S ₃	2.00, 11°	" "
			Isambert. C. R. 96, 1501.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Vanadium disulphide	$V_2 S_2$	4.2, scaly	Kay. J. C. S. 37, 728.
"	"	4.4, powder	
Vanadium trisulphide	$V_2 S_3$	3.7, scaly	" "
"	"	4.0, powder	
Vanadium tetrasulphide	$V_2 S_4$	4.70, 21°	Schafarik. J. P. C. 90, 12.
Vanadium pentasulphide	$V_2 S_5$	3.0	Kay. J. C. S. 37, 728.
Arsenic disulphide	$As_2 S_2$	3.5444	Karsten. Schw. J. 65, 394.
"	"	3.240, realgar	Neumann. P. A. 23, 1.
"	"	3.556	Mohs. See Böttger.
Arsenic trisulphide	$As_2 S_3$	3.459	Karsten. Schw. J. 65, 394.
"	"	3.48	Haidinger. Dana's Min.
"	"	3.44—3.45	Guibourt. See Böttger.
" " Dimorphite	"	3.58	Scacchi. J. 5, 842.
Antimony trisulphide	$Sb_2 S_3$	4.7520	Karsten. Schw. J. 65, 394.
"	"	4.15, amorphous.	Fuchs. Watts' Dict.
"	"	4.614, black	} H. Rose. J. 6, 361.
"	"	4.641, 16°	
"	"	4.280, red	
"	"	4.421, ppt.	
"	"	4.226, 26°.7, red	} Cooke. Proc. Am. Acad. 1877.
"	"	4.223, 23°, ppt.	
"	"	4.228, 28°, gray	
"	"	4.289, 27°	
"	"	4.892	} Ditte. C. R. 102, 212.
"	"	5.012	
" " Stibnite.	"	4.603	Neumann. P. A. 23, 1.
"	"	4.516	Haüy. Dana's Min.
"	"	4.62	Mohs. " "
Bismuth disulphide	$Bi_2 S_2$	7.29, m. of 5	Werther. J. P. C. 27, 65.
Bismuth trisulphide	$Bi_2 S_3$	7.591, 14°.5	Herapath. P. A. 64, 321.
"	"	7.0001	Karsten. Schw. J. 65, 394.
"	"	7.16, native	Forbes. P. M. (4), 29, 4.
Selenium sulphide	$Se S$	3.056, 0°	} Ditte. Z. C. 14, 386.
"	"	3.035, 52°	
Molybdenite	$Mo S_2$	4.591	Mohs. See Böttger.
"	"	4.444	Seibert. " "
Tungsten disulphide	$W_2 S_2$	6.26, 20°	Schafarik. J. P. C. 90, 12.
Chromic sulphide	$Cr_2 S_3$	4.092	Playfair and Joule. M. C. S. 3, 89.
"	"	2.79, 10°	{ Schafarik. J. P. C. 90, 12.
"	"	3.77, 19°	
"	"	preparations.	
Manganese monosulphide. Alabandite.	$Mn S$	3.95—4.01	Leonhard. See Böttger.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Manganese monosulphide. Alabandite.	Mn S	4.036	Bergemann. N. J. 1857, 394.
Hauerite	Mn S ₂	3.463	Von Hauer. J. 1, 1157.
Iron hemisulphide	Fe ₂ S	5.80	Playfair and Joule. M. C. S. 3, 88.
Iron monosulphide. Artif.	Fe S	5.035, m. of 2	" "
" " "	"	4.79	Rammelsberg. J. 15, 263.
" " Troilite	"	4.787	Rammelsberg. J. 1, 1306.
" " "	"	4.817	Rammelsberg. J. 17, 904.
" " "	"	4.75	Smith. J. 8, 1025.
Iron disulphide. Pyrite	Fe S ₂	5.000	Kenngott. J. 6, 780.
" " "	"	5.028	
" " "	"	5.185	
" " "	"	5.042	Zepharovich. S. W. A. 12, 289.
" " "	"	5.042	Neumann. P. A. 23, 1.
" " Marcasite	"	4.882	" "
" " "	"	4.678	Dana's Mineralogy.
" " "	"	4.847	
" " "	"	4.847	
Ferric sulphide	Fe ₂ S ₃	4.246	Playfair and Joule. M. C. S. 3, 88.
" " "	"	4.41	Rammelsberg. J. 15, 262.
Complex sulphide of iron	Fe ₈ S ₉	4.494	Rammelsberg. J. 15, 195.
Pyrrhotite	Fe ₇ S ₈	4.584	Kenngott. S. W. A. 9, 575.
"	"	4.564	Rammelsberg. Dana's Mineralogy.
"	"	4.580	
"	"	4.640	
Nickel hemisulphide	Ni ₂ S	6.05	Playfair and Joule. M. C. S. 3, 88.
Millerite	Ni S	4.601	Kenngott. S. W. A. 9, 575.
"	"	5.65	Rammelsberg. Dana's Mineralogy.
Polydymite	Ni ₄ S ₅	4.808	Laspeyres. J. P. C. (2), 14, 397.
"	"	4.816	
Beyrichite	Ni ₅ S ₇	4.7	Liebe. N. J. 1871, 840.
Cobalt disulphide	Co S ₂	4.269	Playfair and Joule. M. C. S. 3, 88.
Cobaltic sulphide	Co ₂ S ₃	4.8	Hoffmann's Tables.
Copper hemisulphide	Cu ₂ S	5.792, 17.7	Herapath. P. M. 64, 321.
" " "	"	5.9775	Karsten. Schw. J. 65, 394.
" " "	"	5.71	Kopp. J. 16, 5.
" " "	"	5.7022	Thomson. Dana's Min.
" " "	"	5.521—5.795	Scheerer. P. A. 65, 292.
" " Artif. cryst.	"	5.79	Doelter. Z. K. M. 11, 29.
" " two methods	"	5.809	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Copper monosulphide	Cu S	4.1634	Karsten. Schw. J. 65, 394.
“ “ Covellite	“	4.636	Zepharovich. J. 7, 810.
Palladium hemisulphide	$\text{Pd}_2 \text{S}$	7.303, 15°	Schneider. P. A. 141, 532.
Platinum monosulphide	Pt S	8.847, 16°.25	Böttger. J. P. C. 3, 267.
Platinum disulphide	Pt S_2	7.224, 18°.75	“ “
“ “	“	5.27	Schneider. P. A. 138, 604.
Platinum sesquisulphide	$\text{Pt}_2 \text{S}_3$	5.52	“ “

2d. Sulpho-Salts of Arsenic, Antimony, and Bismuth.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Proustite	$\text{Ag}_3 \text{As S}_3$	5.524	Mohs.
“	“	5.53—5.59	Breithaupt. See Böttger.
“	“	5.552, 13°	G. Rose. P. A. 15, 472.
Xanthoconite	$\text{Ag}_9 \text{As}_3 \text{S}_{10}$	4.112—4.159	Breithaupt. J. P. C. 20, 67.
Guitermannite	$\text{Pb}_3 \text{As}_2 \text{S}_6$	5.94	Hillebrand. Bull. No. 20., U. S. G. S., 106.
Sartorite	$\text{Pb As}_2 \text{S}_4$	5.405	} Waltershausen. J. 8, 914.
“	“	5.393	
“	“	5.409	
Dufrenoy'site	$\text{Pb}_2 \text{As}_2 \text{S}_5$	5.5616	Landolt. P. A. 122, 373.
“	“	5.549	Damour. Ann. (3), 14, 379.
“	“	5.561	v. Rath. J. 17, 827.
Enargite	$\text{Cu}'_3 \text{As S}_4$	4.362	Kenngott. Dana's Min.
“	“	4.430	} Breithaupt. J. 3, 702.
“	“	4.445	
“	“	4.37	
“	“	4.34	Kobell. J. 18, 872.
“	“	4.43	Root. J. 21, 998.
“	“	4.39	Burton. J. 21, 998.
“ Guayacanite	“	4.39	Field. J. 12, 771.
“ Clarite	“	4.46	Sandberger. N. J. 1875, 382.
“ Luzonite	“	4.42	Weisbach. M. P. M. 1874, 257.
Julianite	$\text{Cu}_4 \text{As S}_4$	5.12	Websky. Z. G. S. 1871, 486.
Binnite	$\text{Cu}_6 \text{As}_4 \text{S}_9$	4.477	Dana's Mineralogy.
Tennantite	$\text{Cu}'_8 \text{As}_2 \text{S}_7$	4.375	Phillips. See Böttger.
“	“	4.530	Scheerer. P. A. 65, 298.
“	“	4.622	Harrington. J. 37, 1911.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium sulphantimonate	$\text{Na}_3 \text{Sb S}_4 \cdot 9 \text{H}_2 \text{O}$	1.804	Schröder. Dm. 1873.
"	"	1.807	
Pyrargyrite	$\text{Ag}_3 \text{Sb S}_3$	5.831	Mohs.
"	"	5.73—5.84	Breithaupt. See Böttger.
Miargyrite	Ag Sb S_2	5.214	Weisbach. J. 18, 869.
"	"	5.242	
"	"	5.0725	Rumpf. Z. K. M. 7, 513.
"	"	5.0823	
" Artificial	"	5.28	Doelter. Z. K. M. 11, 29.
Stephanite	$\text{Ag}_5 \text{Sb S}_4$	6.269	Mohs. P. A. 15, 474.
"	"	6.275, 21°	H. Rose.
"	"	6.28, 18°	Frenzel. J. 27, 1239.
Polybasite	$\text{Ag}_9 \text{Sb S}_6$	6.214	Dana's Mineralogy.
"	"	6.009	Genth. Am. Phil. Soc., 1885.
Polyargyrite	$\text{Ag}_{24} \text{Sb}_2 \text{S}_{15}$	6.933	Petersen. J. 22, 1197.
"	"	7.014	
Livingstonite	$\text{Hg Sb}_2 \text{S}_4$	4.81	Barcena. A. J. S. (3), 8, 146.
" Artificial	"	4.928, 32°	Baker. C. N. 42, 196.
Jamesonite	$\text{Pb}_2 \text{Sb}_2 \text{S}_5$	5.616, 19°	Schaffgotsch. P. A. 38, 403.
"	"	5.601	Löwe. Dana's Min.
" Massive	"	5.6788	Rammelsberg. P. A. 77, 240.
" Artificial	"	5.5	Doelter. Z. K. M. 11, 29.
Zinkenite	$\text{Pb Sb}_2 \text{S}_4$	5.303	G. Rose. P. A. 7, 91.
"	"	5.310	
"	"	5.21, 18°	Hillebrand. Bull. 20, U. S. G. S.
Boulangerite	$\text{Pb}_3 \text{Sb}_2 \text{S}_6$	5.688—5.941	Hausmann. P. A. 46, 282.
" Massive	"	5.809—5.877	Zepharovich. S. W. A. 56, (1), 30.
" Fibrous	"	5.69—6.086	
Meneghinite	$\text{Pb}_4 \text{Sb}_2 \text{S}_7$	6.339	v. Rath. J. 20, 974.
"	"	6.445	
"	"	6.33	Harrington. J. 37, 1911.
Geocronite	$\text{Pb}_5 \text{Sb}_2 \text{S}_8$	6.407	Apjohn. Dana's Min.
"	"	6.43, 15°	Sauvage. Ann. des Mines, (3), 17, 525.
"	"	6.45—6.47, 15°	Kerndt. P. A. 65, 302.
Plagionite	$\text{Pb}_4 \text{Sb}_6 \text{S}_{13}$	5.40	Rammelsberg. P. A. 47, 495.
Epiboulangerite	$\text{Pb}_6 \text{Sb}_4 \text{S}_{15}$	6.309	Websky. J. 22, 1198.
Semseyite	$\text{Pb}_7 \text{Sb}_6 \text{S}_{16}$	5.9518	Sipöcz. Ber. 19, 95.
Freieslebenite	$\text{Pb}_2 \text{Ag}_3 \text{Sb}_3 \text{S}_8$	6.194	Hausmann. Dana's Min.
"	"	6.230	v. Payr. J. 13, 746.
"	"	6.35	Vrba. S. W. A. 63, 143.
" Diaphorite	"	5.902	Zepharovich. S. W. A. 63, 143.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Brongniardite	$\text{Pb Ag}_2 \text{Sb}_2 \text{S}_5$	5.950, 18°	Damour. Ann. d. Mines, (4), 16, 227.
Chalcostibite	Cu Sb S_2	4.748	H. Rose. Dana's Min.
"	"	5.015	Breithaupt. Dana's Min.
Famatinite	$\text{Cu}_3 \text{Sb S}_4$	4.57	Stelzner. M. P. M. 1873, 242.
Guejarite	$\text{Cu}_2 \text{Sb}_4 \text{S}_7$	5.03	Cumenge. B. S. M. 2, 201.
Tetrahedrite	$\text{Cu}_8 \text{Sb}_2 \text{S}_7$	4.730	Wittstein. J. 8, 912.
"	"	4.58	Sandmann. A. C. P. 89, 368.
"	"	4.90	Kuhlemann. J. 9, 834.
"	"	4.885	Genth. Am. Phil. Soc. 1885.
Bournonite	$\text{Cu}' \text{Pb Sb S}_3$	5.703—5.796	Zincken. J. 2, 724.
"	"	5.726—5.855	Bromeis. J. 2, 724.
"	"	5.726—5.863	Rammelsberg. J. 2, 724.
"	"	5.80	Field. J. 14, 374.
"	"	5.826	Wait. J. 26, 1147.
"	"	5.737—5.86	Hidegh. J. 37, 1911.
"	"	5.7659	Sipöcz. Ber. 19, 95.
" Artificial	"	5.719	Doelter. Z. K. M. 11, 29.
Berthierite	$\text{Fe Sb}_2 \text{S}_4$	4.043	Pettko. J. 1, 1159.
Silver bismuth glance*	Ag Bi S_2	6.92	Rammelsberg. Z. K. M. 3, 101.
Galenobismutite	$\text{Pb Bi}_2 \text{S}_4$	6.88	Sjögren. G. F. F. 4, 109.
Cosalite	$\text{Pb}_2 \text{Bi}_2 \text{S}_5$	6.22—6.33	Frenzel. J. 27, 1238.
Beegerite	$\text{Pb}_6 \text{Bi}_2 \text{S}_9$	7.273	König. J. 34, 1355.
Rezbanyite	$\text{Pb}_4 \text{Bi}_{10} \text{S}_{19}$	6.09	Frenzel. J. 36, 1835.
"	"	6.38	
Chiviatite	$\text{Pb}_2 \text{Bi}_6 \text{S}_{11}$	6.920	Rammelsberg. P. A. 88, 320.
Emplectite	Cu Bi S_2	5.18, 5°	Weisbach. J. 19, 916.
Wittichenite	$\text{Cu}_3 \text{Bi S}_3$	4.3	Hilger. J. 18, 870.
Klaprotholite	$\text{Cu}_6 \text{Bi}_4 \text{S}_9$	4.6	Petersen. N. J. 1868, 415.
Aikinite	$\text{Cu}' \text{Pb Bi S}_3$	6.757	Frick. P. A. 31, 530.
"	"	6.1	Chapman. J. 1, 1158.
Kobellite	$\text{Pb}_3 \text{Bi Sb S}_6$	6.29	Satterberg. P. A. 55, 635.
"	"	6.32	
"	"	6.145	Rammelsberg. J. P. C. 86, 340.

* Alaskalte, a lead silver salt similar to this, has a sp. gr. 6.878. Koenig, Z. K. M. 6, 42.

3d. Miscellaneous Double and Oxy-Sulphides.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Thallium potassium sulphide.	$K\ Tl\ S_2$	4.263	Schneider. P. A. 139, 661.
Iron potassium sulphide.	$K\ Fe'''\ S_2$	2.563	Preis. J.P.C.107,10.
Sodium platinum sulphide	$Na\ Pt_2\ S_3$	6.27, 15°	Schneider. P. A. 138, 604.
Potassium platinum sulphide.	$K\ Pt_2\ S_3$	6.44, 15°	" "
Stromeyerite	$Ag\ Cu'\ S$	6.26	Kopp. J. 16, 5.
"	"	6.255	Stromeyer. Schw. J. 19, 325.
Jalpaite	$Ag_3\ Cu'\ S_4$	6.877	} Breithaupt. J. 11, 682.
"	"	6.890	
Sternbergite	$Ag\ Fe_2\ S_3$	4.215	Dana's Mineralogy.
Silver gold sulphide	$Ag_{10}\ Au_4\ S_{11}$	8.159	Muir. B.S.C.18, 222.
Argyrodite	$Ag_6\ Ge\ S_5$	6.085, 15°	Richter. Quoted by Winkler.
"	"	6.093	} Winkler. J. P. C. (2), 34, 187.
"	"	6.111	
Christophite	$Zn_2\ Fe\ S_3$	3.911—3.931	Breithaupt. B. H. Ztg. 22, 27.
Guadalcazarite	$Zn\ Hg_6\ S_7$	7.15	Petersen. J. 25, 1093
Bornite	$Fe\ Cu_3\ S_3$	5.030	Rammelsberg. Z. G. S. 18, 19.
"	"	4.432	Forbes. J. 4, 758.
"	"	4.91	Katzer. M. P. M. 9, 404.
Iron coppersulphide. Artif.	$Fe_4\ Cu_9\ S_{10}$	4.85	Doelter. Z. K. M. 11, 29.
Barnhardtite	$Fe_2\ Cu_4\ S_5$	4.521	Genth. J. 8, 910.
Chalcopyrite	$Fe\ Cu\ S_4$	4.185	Forbes. J. 4, 759.
"	"	4.1—4.3	Dana's Mineralogy.
" Artificial	"	4.196	Doelter. Z. K. M. 11, 29.
Iron coppersulphide. Artif.	$Fe_4\ Cu_4\ S_7$	4.999	" "
Furnace product. Cryst.	$Fe_5\ Cu_4\ S_9$	3.97	Brögger. Z. K. M. 3, 495.
Cubanite	$Fe_2\ Cu\ S_4$	4.026	} Breithaupt. P. A. 59, 325.
"	"	4.042	
"	"	4.18	Smith. J. 7, 810.
Chalcopyrrhotite	$Fe_4\ Cu\ S_6$	4.28	Blomstrand. Dana's Min., 2d Append.
Carrollite	$Co\ Cu\ S_2$	4.58	Faber. J. 5, 840.
"	"	4.85	Smith and Brush. J. 6, 782.
Pentlandite	$Fe\ Ni_2\ S_3$	4.6	Scheerer. P. A. 58, 316.
Horbachite	$Fe_8\ Ni_2\ S_{15}$	4.43	Knop. N. J. 1873, 523.
Daubreelite	$Fe\ Cr_2\ S_4$	5.01	Smith. J.C.S. 36, 33.
Bismuth nickel sulphide	$Bi_{24}\ Ni_5\ S_2$	9.15	Werther. J. 5, 389.
Voltzite	$4\ Zn\ S.\ Zn\ O$	3.5—3.8	Vogl. J. 6, 786.
Kermesite	$2\ Sb_2\ S_3.\ Sb_2\ O_3$	4.5—4.6	Dana's Mineralogy.

Castillite, Grünauite, and Stannite are omitted as having too indefinite composition

X. SELENIDES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Naumannite -----	$\text{Ag}_2 \text{Se}$ -----	8.0 -----	G. Rose. P. A. 14, 471.
Zinc selenide -----	Zn Se -----	5.40, 15° -----	Margottet. J. C. S. 32, 570.
Cadmium selenide -----	Cd Se -----	8.789 -----	Little. J. 12, 94.
“ “ -----	“ -----	5.80 -----	Margottet. J. C. S. 32, 570.
Mercurous selenide -----	$\text{Hg}_2 \text{Se}$ -----	8.877 -----	Little. J. 12, 95.
Tiemannite -----	Hg Se -----	7.274 -----	Dana's Mineralogy.
“ -----	“ -----	7.1—7.37 -----	Kerl. J. 5, 837.
“ -----	“ -----	8.187 -----	} Penfield. A. J. S. (3), 29, 449.
“ -----	“ -----	8.188 -----	
Lead selenide. Artificial -----	Pb Se -----	8.154 -----	Little. J. 12, 95.
“ “ Clausthalite -----	“ -----	6.8 -----	Zinken. P. A. 3, 274.
Ferric selenide -----	$\text{Fe}_2 \text{Se}_3$ -----	6.38 -----	Little. J. 12, 94.
Nickel selenide -----	Ni Se -----	8.462 -----	“ “
Cobalt selenide -----	Co Se -----	7.647 -----	“ “
Berzelianite -----	$\text{Cu}'_2 \text{Se}$ -----	6.71 -----	Nordenskiöld. J. 20, 977.
Copper selenide -----	Cu Se -----	6.655 -----	Little. J. 12, 95.
Arsenic triselenide -----	$\text{As}_2 \text{Se}_3$ -----	4.752 -----	“ “
Bismuth triselenide -----	$\text{Bi}_2 \text{Se}_3$ -----	6.82 -----	Schneider. J. 8, 386.
“ “ -----	“ -----	7.406 -----	Little. J. 12, 95.
“ “ Frenzelite -----	“ -----	6.25, 21° -----	Frenzel. N. J. 1874, 679.
“ “ Guanajuatite. -----	“ -----	6.62 -----	Fernandez. Dana's Min., 3d App.
Tin monoselenide -----	Sn Se -----	5.24, 15° -----	Schneider. J. P. C. 98, 236.
“ “ -----	“ -----	6.179, 0° -----	Ditte. C. R. 96, 1792.
Tin diselenide -----	Sn Se_2 -----	5.133 -----	Little. J. 12, 95.
“ “ -----	“ -----	4.85 -----	Schneider. J. P. C. 98, 236.
Eucairite -----	$\text{Cu}' \text{Ag Se}$ -----	7.48—7.51 -----	Nordenskiöld. J. 20, 977.
Crookesite -----	$(\text{Cu Ag Tl})_2 \text{Se}$ -----	6.90 -----	“ “
Lehrbachite -----	$(\text{Pb Hg}) \text{Se}$ -----	7.804—7.876 -----	Dana's Mineralogy.
Zorgite -----	$(\text{Pb Cu}) \text{Se}$ -----	6.38 -----	Pisani. J. 32, 1183.
“ -----	$(\text{Pb Cu})_3 \text{Se}_2$ -----	6.26 -----	“ “

XI. TELLURIDES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Hessite -----	Ag_2Te -----	8.412 } -----	G. Rose. P. A. 18, 64. Genth. J. 27, 1233. Becke. Z. K. M. 6, 205. Margottet. J. C. S. 32, 570. " "
" -----	" -----	8.565 } -----	
" -----	" -----	8.178 -----	
" -----	" -----	8.318 -----	
Zinc telluride -----	Zn Te -----	6.34, 15° -----	Genth. Z. K. M. 2, 4. Ditte. C. R. 96, 1793. G. Rose. P. A. 18, 64. Genth. J. 27, 1233. Bödeker and Gie- secke. B. D. Z. Dana's Mineralogy. Wehrle. Dana's Min. Genth. J. 5, 833. Jackson. J. 12, 770. Genth. J. 13, 744. Balch. J. 16, 794.
Cadmium telluride -----	Cd Te -----	6.20, 15° -----	
Coloradoite -----	Hg Te -----	8.627 -----	
Tin telluride -----	Sn Te -----	6.478, 0° -----	
Altaite -----	Pb Te -----	8.159 -----	Genth. Z. K. M. 2, 6. Genth. J. 27, 1233. " "
" -----	" -----	8.060 -----	
Antimony telluride -----	Sb_2Te_3 -----	6.47 } 13° -- {	
" " -----	" -----	6.51 } -----	
Joseite -----	Bi_3Te -----	7.924—7.936 -----	Rammelsberg. Z. G. S. 21, 81.
Wehrlite -----	Bi_3Te_2 -----	8.44 -----	
Tetradymite -----	Bi_2Te_3 -----	7.237 -----	
" -----	" -----	7.868 -----	
" -----	" -----	7.941 -----	Genth. J. 27, 1233.
" -----	" -----	7.642, 18° -----	
Calaverite -----	Au Te_4 -----	9.043 -----	
Sylvanite -----	Au Ag Te_3 -----	7.943 -----	
Petzite -----	$\text{Au Ag}_3\text{Te}_2$ -----	9.010 } -----	Rammelsberg. Z. G. S. 21, 81.
" -----	" -----	9.020 } -----	
Tapalpite -----	$\text{Ag}_2\text{Bi}_2\text{S Te}_2$ -----	7.803 -----	
" -----	" -----	" -----	

XII. PHOSPHIDES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Silver phosphide -----	Ag_2P_3 -----	4.63 -----	Schrötter. S. W. A. 1849, 301.
Zinc phosphide -----	Zn_3P_2 -----	4.76 -----	" "
" " -----	" -----	4.72 -----	Hayer. J. C. S. 32, 113.
Tin monophosphide -----	Sn P -----	6.56 -----	Schrötter. S. W. A. 1849, 301.
" " -----	" -----	6.793 -----	Natanson and Vort- mann. Ber. 10, 1460.
Tin diphosphide -----	Sn P_2 -----	4.91, 12° -----	Emmerling. Ber. 12, 155.
Chromium phosphide -----	Cr P -----	4.68 -----	Martius. J. 11, 160.
Manganese phosphide -----	Mn_5P_2 -----	5.951 -----	Wöhler. J. 6, 359.
" " -----	Mn_3P -----	4.94 -----	Schrötter. S. W. A. 1849, 301.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Iron phosphide -----	$\text{Fe}_3 \text{P}$ -----	6.28 -----	Hvoslef. J. 9, 285.
" " -----	$\text{Fe}_3 \text{P}_4$ -----	5.04 -----	Freese. J. 20, 284.
Nickel phosphide -----	$\text{Ni}_5 \text{P}$ -----	7.283 -----	Jannetaz. J. C. S.
" " -----	$\text{Ni}_3 \text{P}_2$ -----	5.99 -----	44, 651.
Cobalt phosphide -----	$\text{Co}_3 \text{P}_2$ -----	5.62 -----	Schrötter. S. W. A.
Tricopper phosphide -----	$\text{Cu}_3 \text{P}$ -----	6.75 -----	1849, 301.
" " -----	" -----	6.59 -----	" "
" " -----	" -----	6.350 -----	Hvoslef. J. 9, 285.
Copper monophosphide -----	Cu P -----	5.14 -----	Sidot. J. R. C. 5, 75.
Molybdenum monophosphide.	Mo P -----	6.167 -----	Emmerling. Ber. 12,
Tungsten hemiphosphide.	$\text{W}_2 \text{P}$ -----	5.207 -----	153.
Palladium diphosphide -----	Pd P_2 -----	8.25 -----	Rautenberg. J. 12,
Platinum diphosphide -----	Pt P_2 -----	8.77 -----	163.
Iridium hemiphosphide *	$\text{Ir}_2 \text{P}$ -----	13.768 -----	Wöhler. J. 4, 347.
Gold phosphide -----	$\text{Au}_2 \text{P}_3$ -----	6.67 -----	Schrötter. S. W. A.
			1849, 301.

XIII. ARSENIDES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Silver arsenide -----	Ag As -----	8.51 -----	Descamps. J. Ph. C.
Trisilver diarsenide -----	$\text{Ag}_3 \text{As}_2$ -----	9.01 -----	(4), 27, 424.
Trisilver arsenide -----	$\text{Ag}_3 \text{As}$ -----	9.51 -----	" "
" " Huntelite -----	" -----	7.47 -----	" "
Tricopper diarsenide -----	$\text{Cu}_3 \text{As}_2$ -----	6.94 -----	Wurtz. Dana's
Dicopper arsenide -----	$\text{Cu}_2 \text{As}$ -----	7.76 -----	Min., 3d App.
Tricopper arsenide -----	$\text{Cu}_3 \text{As}$ -----	7.81 -----	Descamps. J. Ph. C.
" " Domeykite -----	" -----	7.75 -----	(4), 27, 424.
Algodonite -----	$\text{Cu}_6 \text{As}$ -----	7.603 -----	" "
" -----	" -----	6.902 -----	Genth. J. 15, 708.
Whitneyite -----	$\text{Cu}_9 \text{As}$ -----	8.408 -----	Genth. A. J. S. (2),
" -----	" -----	8.246 -----	33, 192.
" -----	" -----	8.471 -----	Field. J. 10, 655.
Tricadmium arsenide -----	$\text{Cd}_3 \text{As}$ -----	6.26 -----	Genth. J. 12, 771.
Tin hemiarsenide -----	$\text{Sn}_2 \text{As}$ -----	7.001, 18° -----	Genth. J. 15, 708.
Tin diarsenide -----	Sn As_2 -----	6.56 -----	Descamps. J. Ph. C.
Lead arsenide -----	Pb As -----	9.55 -----	(4), 27, 424.
Trilead tetrarsenide -----	$\text{Pb}_3 \text{As}_4$ -----	9.65 -----	" "

* Commercial "cast iridium." Contains several per cent. of the phosphides of rhodium and ruthenium, with possibly a little phosphide of osmium.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Trilead diarsenide -----	$\text{Pb}_3 \text{As}_2$ -----	9.76 -----	Descamps. J. Ph. C. (4), 27, 424.
Kaneite -----	Mn As -----	5.55 -----	Kane. Dana's Min.
Leucopyrite -----	$\text{Fe}_2 \text{As}_3$ -----	6.659 -----	Breithaupt. P. A. 9, 115.
" -----	" -----	6.848 -----	
Lölingite -----	Fe As_2 -----	6.246, in mass. -----	Behncke. J. 9, 831.
" -----	" -----	6.321, pulv. -----	
" -----	" -----	7.400 -----	Hillebrand. A. J. S. (3), 27, 353.
Trinickel arsenide -----	$\text{Ni}_3 \text{As}$ -----	7.71 -----	Descamps. J. Ph. C. (4), 27, 424.
Niccolite -----	Ni As -----	7.663 -----	Scheerer. P. A. 65, 292.
" -----	" -----	7.39, 16° -----	Ebelmen. Ann. d. Mines (4), 11, 55.
" -----	" -----	7.314 -----	Genth. J. 36, 1829.
Rammelsbergite -----	Ni As_2 -----	7.099—7.188 -----	Breithaupt. Dana's Min.
" -----	" -----	6.9 -----	McCoy. J. 37, 1905.
Smaltite -----	Co As_2 -----	6.84 -----	Rose. J. 5, 836.
Skutterudite -----	Co As_3 -----	6.78 -----	Scheerer. P. A. 42, 553.
Antimony hemiarsenide -----	$\text{Sb}_2 \text{As}$ -----	6.46 -----	Descamps. J. Ph. C. (4), 27, 424.
Allemontite -----	Sb As_3 -----	6.13 -----	Thomson. Dana's Min.
" -----	" -----	6.203 -----	Rammelsberg. Dana's Min.
Bismuth arsenide -----	$\text{Bi}_3 \text{As}_4$ -----	8.45 -----	Descamps. J. Ph. C. (4), 27, 424.
Gold arsenide -----	$\text{Au}_4 \text{As}_3$ -----	16.20 -----	" "
O'Rileyite -----	$\text{Cu}'_2 \text{Fe}_8 \text{As}_5$ -----	7.343—7.428 -----	Waldie. J. 24, 1133.

XIV. ANTIMONIDES.*

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Dyscrasite. Stibiotriargen- tite. " " -----	$\text{Ag}_3 \text{Sb}_2$ -----	9.611 -----	Petersen. P. A. 137, 377.
" " -----	" -----	9.77 -----	
Dyscrasite. Stibiohexar- gentite. -----	$\text{Ag}_6 \text{Sb}_2$ -----	10.027 -----	" "
Zinc antimonide -----	Zn Sb -----	6.383 -----	Cooke. P. M. (4), 19, 413.
" " -----	" -----	6.384 -----	
Trizinc diantimonide -----	$\text{Zn}_3 \text{Sb}_2$ -----	6.327 -----	" "
Breithauptite -----	Ni Sb -----	7.541 -----	Breithaupt. Dana's Min.
Tin antimonide * -----	$\text{Sn}_2 \text{Sb}$ -----	7.07, 19° -----	Bödeker. B. D. Z.

* Compare also the table of alloys.

XV. SULPHIDES WITH ARSENIDES OR ANTIMONIDES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Arsenopyrite -----	Fe S As -----	6.269 -----	Kenngott. S. W. A. 9, 584.
" -----	" -----	6.21 -----	Vogel. J. 8, 907.
" -----	" -----	6.095, in mass. -----	} Potyka. J. 12, 772.
" -----	" -----	6.004, pulv. -----	
" -----	" -----	6.255 -----	Forbes. J. 18, 871.
" -----	" -----	6.16 -----	Zepharovich. S. W. A. 56 (1), 42.
" -----	" -----	6.05—6.07 -----	McCay. J. 37, 1905.
Pacite -----	Fe ₅ S ₂ As ₈ -----	6.297 } -----	} Breithaupt and Weisbach. B. H. Ztz. 25, 167.
" -----	" -----	6.303 } -----	
Glaucopyrite -----	Fe ₁₃ S ₂ As ₂₄ -----	7.181 -----	Sandberger. J. P. C. (2), 1, 230.
Glaucodot -----	(Co Fe) S As -----	5.975—6.003 -----	Breithaupt. P. A. 67, 127.
" -----	" -----	5.905—6.011 -----	Schrauf and Dana. S. W. A. 69, 153.
Cobaltite -----	Co S As -----	6.0—6.3 -----	Dana's Mineralogy.
Gersdorffite -----	Ni S As -----	5.49 } -----	} Forbes. J. 21, 997.
" -----	" -----	5.65 } -----	
" -----	" -----	6.1977 -----	Sipöcz. Ber. 19, 95.
Ullmannite -----	Ni S Sb -----	6.506, 20° -----	Rammelsberg. P. A. 64, 189.
" -----	" -----	6.803 -----	} Jannasch. J. 36, 1832.
" -----	" -----	6.883 -----	
Corynite -----	Ni S (As Sb) -----	5.994 -----	Zepharovich. J. 18, 872.
Wolfachite -----	" -----	6.372 -----	Sandberger. J. 22, 1193.
Alloclasite -----	Co ₃ S ₄ Bi ₄ As ₆ -----	6.6 -----	Tschermak. J. 19, 919.
" -----	" -----	6.23—6.5 -----	Frenzel. J. 36, 1831.

XVI. HYDRIDES, BORIDES, CARBIDES, SILICIDES, NITRIDES, ETC.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium hydride -----	Na ₂ H -----	0.959 -----	Troost and Hautefeuille. C. R. 78, 970.
Palladium hydride -----	Pd ₃ H ₂ -----	10.8033 -----	Dewar. P. M. (4), 47, 334.
" " -----	Pd ₂ H -----	11.06 -----	Troost and Hautefeuille. C. R. 78, 970.
Columbium hydride -----	Cb H -----	6.0 to 6.6 } -----	{ Marignac. J. 21, 214. Supposed to be metal.
" " -----	" -----	6.15 to 7.37 } -----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Platinum boride-----	Pt B-----	17.32-----	Martius. J. 11, 210.
Iron silico-carbide-----	Fe ₆ Si ₂ C-----	6.6-----	Colson. J. C. S. 42, 933.
Titanium carbide-----	Ti C, impure-----	5.10-----	Shimer. J. A. C. 1, 4.
Iron silicide-----	Fe ₂ Si-----	6.611-----	Hahn. J. 17, 264.
Platinum silicide-----	Pt ₃ Si ₂ -----	14.1-----	Colson. Ber. 15, 724.
" "-----	Pt ₉ Si-----	18.97-----	Memminger. A. C. J. 7, 172.
Aluminum titanide-----	Al ₄ Ti-----	3.11, 16°-----	Levy. C. R. 106, 66.
Aluminum zirconide (?)-----	Al ₃ Zr, or Al ₆ Zr ₂ Si-----	3.629-----	Melliss. Göttingen Doct. Diss., 1870.
Ammonia. Liquefied-----	N H ₃ -----	.731, 15°.5-----	Faraday. P. T. 1845, 155.
" "-----	"-----	.6234, 0°-----	Jolly. J. 14, 165.
" "-----	"-----	.6492, —10°-----	
" "-----	"-----	.6429, —5°-----	
" "-----	"-----	.6364, 0°-----	
" "-----	"-----	.6298, 5°-----	
" "-----	"-----	.6230, 10°-----	
" "-----	"-----	.6160, 15°-----	
" "-----	"-----	.6089, 20°-----	
Titanium nitride-----	Ti ₂ N ₂ -----	5.28, 18°-----	Friedel and Guérin. C. R. 82, 974.
Iron nitride. Impure-----	Fe ₅ N ₂ -----	3.147-----	Silvestri. Ber. 8, 1356.

XVII. HYDROXIDES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium hydroxide-----	Na O H-----	2.130-----	Filhol. Ann. (3), 21, 415.
" "-----	"-----	1.723-----	W. C. Smith. Am. J. P. 53, 145.
" "-----	2 Na O H. 7 H ₂ O-----	1.405-----	Hermes. J. 16, 178.
Potassium hydroxide-----	K O H-----	2.100-----	Dalton.
" "-----	"-----	2.044-----	Filhol. Ann. (3), 21, 415.
" "-----	"-----	1.958-----	W. C. Smith. Am. J. P. 53, 145.
Brucite-----	Mg (O H) ₂ -----	2.36-----	Hermann. J. 14, 979.
"-----	"-----	2.376-----	Beck. J. 15, 718.
" Artif. cryst.-----	"-----	2.36, 15°-----	Schulten. C. R. 101, 72.
Zinc hydroxide-----	Zn (O H) ₂ -----	2.677-----	Nicklès. J. 1, 435.
" "-----	"-----	3.053-----	Filhol. Ann. (3), 21, 415.
Cadmium hydroxide. Cryst.-----	Cd (O H) ₂ -----	4.79, 15°-----	Schulten. C. R. 101, 72.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Calcium hydroxide -----	Ca (O H)_2 -----	2.078 -----	Filhol. Ann. (3), 21, 415.
Strontium hydroxide -----	Sr (O H)_2 -----	3.625 -----	" "
" " -----	$\text{Sr (O H)}_2 \cdot 8 \text{H}_2 \text{O}$ -----	1.396 -----	" "
" " -----	" -----	1.911, 16° -----	Filhol. J. P. C. 36, 37.
Barium hydroxide -----	Ba (O H)_2 -----	4.495 -----	Filhol. Ann. (3), 21, 415.
" " -----	$\text{Ba (O H)}_2 \cdot 8 \text{H}_2 \text{O}$ -----	1.656 -----	" "
" " -----	" -----	2.188, 16° -----	Filhol. J. P. C. 36, 37.
Lead hydroxide -----	$\text{Pb (O H)}_2 \cdot 2 \text{Pb O}$ -----	7.592, 0° -----	Ditte. J. C. S. 42, 928.
Lead oxyhydroxide -----	$\text{Pb (O H)}_2 \text{O}$ -----	6.267 -----	Wernicke. J. P. C. (2), 2, 419.
Manganese hydroxide. Cryst. -----	Mn (O H)_2 -----	3.258, 15° -----	Schulten. C. R. 105, 1266.
Manganese oxyhydroxide -----	$\text{Mn (O H)}_2 \text{O}$ -----	2.564 -----	} Wernicke. J. P. C. (2), 2, 419.
" " -----	" -----	2.596 -----	
Manganite -----	$\text{Mn}_2 (\text{O H})_2 \text{O}_2$ -----	4.335 -----	Rammelsberg. J. 18, 878.
Manganese hydroxide -----	$\text{Mn}_{12} \text{H}_2 \text{O}_{24}$ -----	4.750 -----	} 4° { Veley. J. C. S. 41, 65.
" " -----	" -----	4.800 -----	
" " -----	$\text{Mn}_{24} \text{H}_{16} \text{O}_{53}$ -----	4.671 -----	} 4° { " "
" " -----	" -----	4.681 -----	
Turgite -----	$\text{Fe}_4 (\text{O H})_2 \text{O}_5$ -----	3.56—3.74 -----	Hermann. Dana's Min.
" -----	" -----	4.681 -----	Bergemann. J. 12, 771.
" -----	" -----	4.14 -----	Brush. A. J. S. (2), 44, 219.
Ferric oxyhydroxide -----	$\text{Fe}_2 (\text{O H})_2 \text{O}_2$ -----	2.91 -----	} Brunck and Graebe. Ber. 13, 725.
" " -----	" -----	2.92 -----	
" " Göthite -----	" -----	4.11 -----	} Yorke. P. M. (3), 27, 265—267.
" " " -----	" -----	4.19 -----	
" " " -----	" -----	4.24 -----	
Limnrite -----	$\text{Fe}_4 (\text{O H})_6 \text{O}_3$ -----	3.6—4.0 -----	Dana's Mineralogy.
" -----	" -----	3.908 -----	Bergemann. Dana's Min.
Ferric hydroxide -----	$\text{Fe}_2 (\text{O H})_6$ -----	3.77, precip. -----	Yorke. P. M. (3), 27, 269.
" " Limnrite -----	" -----	2.69 -----	Church. J. 18, 879.
Nickelic oxyhydroxide -----	$\text{Ni}_2 (\text{O H})_4 \text{O}$ -----	2.741 -----	Wernicke. J. P. C. (2), 2, 419.
Cobaltic oxyhydroxide -----	$\text{Co}_2 (\text{O H})_4 \text{O}$ -----	2.483 -----	" "
Heterogenite -----	$\text{Co}_5 \text{O}_7 \cdot 6 \text{H}_2 \text{O}$ -----	3.44 -----	Frenzel. J. P. C. (2), 5, 404.
Copper hydroxide -----	Cu (O H)_2 -----	3.368 -----	Schröder. Dm. 1873.
Diaspore -----	Al (O H) O -----	3.39 -----	Jackson. A. J. S. (2), 42, 108.
" -----	" -----	3.343 -----	Shepard. A. J. S. (2), 50, 96.
Gibbsite -----	Al (O H)_3 -----	2.387 -----	Hermann. J. 1, 1164.
" -----	" -----	2.389 -----	Silliman, Jr. J. 2, 389.
Stibiconite -----	$\text{Sb}_2 (\text{O H})_2 \text{O}_3$ -----	5.28 -----	Blum and Delffs. J. P. C. 40, 318.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Antimonic hydroxide	Sb (O H)_5	6.6	Boullay. Dana's Min.
Bismuth oxyhydroxide	$\text{Bi (O H)}_2 \text{O}$	5.571	Wernicke. J. P. C. (2), 2, 419.
" "	"	5.8, 20°	Muir, Hoffmeister, and Robbs. J. C. S. 39, 32.
Metabismuthic hydroxide	Bi (O H) O_2	5.75, 20°	" "
Uranyl hydroxide	$\text{U (O H)}_2 \text{O}_2$	5.926, 15°	Malaguti. J. P. C. 29, 233.
Eliasite	$\text{U (O H)}_4 \text{O}$	4.087—4.237	Zepharovich. Dana's Min.
Gummite	U (O H)_6	3.9—4.20	Breithaupt. Dana's Min.
Chalcophanite	$\text{Zn Mn}_2 \text{O}_5 \cdot 2 \text{H}_2 \text{O}$	3.907	Moore. J. C. S. 36, 17.
Namaqualite	$\text{Cu}_2 \text{Al (OH)}_4 \cdot 2 \text{H}_2 \text{O}$	2.49	Church. J. C. S. 231.
Hydrotalcite	$\text{Al Mg}_3 (\text{OH})_9 \cdot 3 \text{H}_2 \text{O}$	2.04	Hermann. J. 1, 1168.

XVIII. CHLORATES AND PERCHLORATES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Hydrogen chlorate, or chloric acid.	$\text{H Cl O}_3 \cdot 7 \text{H}_2 \text{O}$	1.282, 14°.2	Kammerer.* P. A. 138, 390.
Sodium chlorate	Na Cl O_3	2.467	Berthelot.
" "	"	2.289	Bödeker. B. D. Z.
Potassium chlorate	K Cl O_3	2.32643, 4°	Playfair and Jbule. J. C. S. 1, 137.
" "	"	2.350, 17°.5	Kremers. J. 10, 67.
" "	"	2.325	Buignet. J. 14, 15.
" "	"	2.323	Holker. P. M. (3), 27, 213.
" "	"	2.325, m. of 5	Schröder. Dm. 1873.
" "	"	2.246 } Ex-	
" "	"	2.364 } tremes	
" "	"	2.167	W. C. Smith. Am. J. P. 53, 145.
Silver chlorate	Ag Cl O_3	4.430	Schröder. J. 12, 12.
" "	"	4.439	Topsoë. B. S. C. 19, 246.
Thallium chlorate	Tl Cl O_3	5.5047, 9°	Muir. C. N. 33, 156
Strontium chlorate	$\text{Sr Cl}_2 \text{O}_6$	3.150	Schröder. Dm. 1873
" "	"	3.154	
Barium chlorate	$\text{Ba Cl}_2 \text{O}_6 \cdot \text{H}_2 \text{O}$	2.988, 15°	Bödeker. B. D. Z.
" "	"	3.214	Schröder. Dm. 1873.
" "	"	3.188	
Lead chlorate	$\text{Pb Cl}_2 \text{O}_6 \cdot \text{H}_2 \text{O}$	4.018	" "
" "	"	4.030	
" "	"	4.063	

*Kammerer also gives figures for other hydrates of chloric acid.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Lead chlorate -----	$\text{Pb Cl}_2 \text{O}_6 \cdot \text{H}_2\text{O}$ -----	3.989 -----	Topsoë. B. S. C. 19, 246.
Mercurous chlorate -----	Hg Cl O_3 -----	6.409 -----	Schröder. Dm. 1873.
Mercuric chlorate -----	$\text{Hg Cl}_2 \text{O}_6$ -----	4.998 -----	" "
Basic mercuric chlorate --	$\text{Hg}_2 \text{Cl}_2 \text{O}_7 \cdot \text{H}_2\text{O}$ -----	5.151 -----	Topsoë. B. S. C. 19, 246.
Hydrogen perchlorate, or perchloric acid. -----	H Cl O_4 -----	1.782, 15°.5 -----	Roscoe. J. 14, 146.
" " -----	$\text{H Cl O}_4 \cdot \text{H}_2\text{O}$ -----	1.811, 50° -----	" "
Lithium perchlorate -----	Li Cl O_4 -----	1.841 -----	Wyrouboff. B. S. M. 6, 53.
Potassium perchlorate -----	K Cl O_4 -----	2.528 } -----	Kopp. J. 16, 4.
" " -----	" -----	2.550 } -----	
" " -----	" -----	2.520, m. of 6 } -----	
" " -----	" -----	2.510 } Ex- -----	Schröder. Dm. 1873.
" " -----	" -----	2.537 } tremes } -----	
Ammonium perchlorate -----	Am Cl O_4 -----	1.885, 25° -----	Stephan. F. W. C.
Thallium perchlorate -----	Tl Cl O_4 -----	4.844, 15°.5 -----	Roscoe. C. N. 14, 217.

XIX. BROMATES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium bromate -----	Na Br O_3 -----	3.339, 17°.5 -----	Kremers. J. 10, 67.
Potassium bromate -----	K Br O_3 -----	3.271, 17°.5 -----	" "
" " -----	" -----	3.218 -----	Topsoë. B. S. C. 19, 246.
" " -----	" -----	3.323, 19° -----	Storer. F. W. C.
Silver bromate -----	Ag Br O_3 -----	5.1983, 16° } -----	" "
" " -----	" -----	5.2153, 18° } -----	
Magnesium bromate -----	$\text{Mg Br}_2 \text{O}_6 \cdot 6 \text{H}_2\text{O}$ -----	2.289 -----	Topsoë. B. S. C. 19, 246.
Zinc bromate -----	$\text{Zn Br}_2 \text{O}_6 \cdot 6 \text{H}_2\text{O}$ -----	2.566 -----	Topsoë. C. C. 4, 76.
Cadmium bromate -----	$\text{Cd Br}_2 \text{O}_6 \cdot 2 \text{H}_2\text{O}$ -----	3.758 -----	Topsoë. B. S. C. 19, 246.
Basic mercuric bromate --	$\text{Hg}_2 \text{Br}_2 \text{O}_7 \cdot \text{H}_2\text{O}$ -----	5.815 -----	Topsoë. C. C. 4, 76.
Calcium bromate -----	$\text{Ca Br}_2 \text{O}_6 \cdot \text{H}_2\text{O}$ -----	3.329 -----	" "
Strontium bromate -----	$\text{Sr Br}_2 \text{O}_6 \cdot \text{H}_2\text{O}$ -----	3.773 -----	" "
Barium bromate -----	$\text{Ba Br}_2 \text{O}_6$ -----	4.0395, 17° } -----	Storer. F. W. C.
" " -----	" -----	3.9918, 18° } -----	
" " -----	$\text{Ba Br}_2 \text{O}_6 \cdot \text{H}_2\text{O}$ -----	3.820 -----	Topsoë. C. C. 4, 76.
Lead bromate -----	$\text{Pb Br}_2 \text{O}_6 \cdot \text{H}_2\text{O}$ -----	4.950 -----	" "
Nickel bromate -----	$\text{Ni Br}_2 \text{O}_6 \cdot 6 \text{H}_2\text{O}$ -----	2.575 -----	" "
Copper bromate -----	$\text{Cu Br}_2 \text{O}_6 \cdot 6 \text{H}_2\text{O}$ -----	2.583 -----	" "

XX. IODATES AND PERIODATES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Hydrogen iodate,* or iodic acid. " " " "	H I O_3 -----	4.869, 0°-----	Ditte. Ann. (4), 21, 22.
" " " "	"-----	4.816, 50°.8-----	
Sodium iodate-----	Na I O_3 -----	4.277, 17°.5-----	Kremers. J. 10, 67.
Potassium iodate-----	K I O_3 -----	3.979, 17°.5-----	" "
" "-----	"-----	2.601-----	Ditte. Ann. (4), 21, 48.
" "-----	"-----	3.802, 18°-----	Clarke.
Ammonium iodate-----	Am I O_3 -----	3.3372, 12°.5-----	Fullerton. F. W. C.
" "-----	"-----	3.3085, 21°-----	
Silver iodate. Precip.-----	Ag I O_3 -----	5.4023, 16°.5-----	" "
" " Cryst. from ammonia.-----	"-----	5.6475, 14°.5-----	
Magnesium iodate-----	$\text{Mg I}_2 \text{ O}_6 \cdot 4 \text{ H}_2 \text{ O}$ -----	3.283, 13°.5-----	Bishop. F. W. C.
Barium iodate-----	$\text{Ba I}_2 \text{ O}_6$ -----	5.2299, 18°-----	Fullerton. F. W. C.
Lead iodate-----	$\text{Pb I}_2 \text{ O}_6$ -----	6.209-----	Schröder. Dm. 1873.
" "-----	"-----	6.248-----	
" "-----	"-----	6.257-----	
" "-----	"-----	6.155, 20°-----	Fullerton. F. W. C.
Nickel iodate-----	$\text{Ni I}_2 \text{ O}_6 \cdot 6 \text{ H}_2 \text{ O}$ -----	3.6954, 22°-----	" "
Cobalt iodate-----	$\text{Co I}_2 \text{ O}_6 \cdot \text{H}_2 \text{ O}$ -----	5.008, 18°-----	" "
" "-----	$\text{Co I}_2 \text{ O}_6 \cdot 6 \text{ H}_2 \text{ O}$ -----	3.6659, 18°.5-----	" "
Didymium periodate-----	$\text{Di I O}_5 \cdot 4 \text{ H}_2 \text{ O}$ -----	3.755-----	Cleve. U. N. A. 1885.
" "-----	"-----	3.761-----	
Samarium periodate-----	$\text{Sm I O}_5 \cdot 4 \text{ H}_2 \text{ O}$ -----	3.793, 21°.2-----	" "

XXI. THIOSULPHATES,† SULPHITES, DITHIONATES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium thiosulphate-----	$\text{Na}_2 \text{ S}_2 \text{ O}_3 \cdot 5 \text{ H}_2 \text{ O}$ -----	1.672-----	Buignet. J. 14, 15.
" "-----	"-----	1.736, 10°-----	Kopp. J. 8, 45.
" "-----	"-----	1.734-----	Schiff. J. 12, 41.
" "-----	"-----	1.723-----	W. C. Smith. Am. J. P. 53, 148.
Potassium thiosulphate-----	$\text{K}_2 \text{ S}_2 \text{ O}_3$ -----	2.590-----	Buignet. J. 14, 15.
Magnesium thiosulphate-----	$\text{Mg S}_2 \text{ O}_3 \cdot 6 \text{ H}_2 \text{ O}$ -----	1.818, 24°-----	Oliver. F. W. C.
Calcium thiosulphate-----	$\text{Ca S}_2 \text{ O}_3 \cdot 6 \text{ H}_2 \text{ O}$ -----	1.8715, 13°.5-----	Richardson. F. W. C.
" "-----	"-----	1.8728, 16°-----	
Strontium thiosulphate-----	$\text{Sr S}_2 \text{ O}_3 \cdot 6 \text{ H}_2 \text{ O}$ -----	2.1778, 17°-----	" "
Barium thiosulphate-----	$\text{Ba S}_2 \text{ O}_3 \cdot \text{H}_2 \text{ O}$ -----	3.4461, 16°-----	" "
" "-----	"-----	3.4486, 18°-----	
Cobalt thiosulphate-----	$\text{Co S}_2 \text{ O}_3 \cdot 6 \text{ H}_2 \text{ O}$ -----	1.935, 25°-----	Oliver. F. W. C.
Hydrogen sulphite or sulphurous acid.	$\text{H}_2 \text{ S O}_3 \cdot 6 \text{ H}_2 \text{ O}$ -----	1.147, 15°, cryst.	Geuther. A. C. P. 224, 218.

* For various hydrates of iodic acid see Kaemmerer, P. A. 138, 390.

† Commonly called hyposulphites.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium sulphite-----	$\text{Na}_2 \text{S O}_3 \cdot 10 \text{H}_2 \text{O}$ ----	1.561-----	Buignet. J. 14, 15.
Cuprous sulphite. Red----	$\text{Cu}_2 \text{S O}_3 \cdot \text{H}_2 \text{O}$ ----	4.46-----	Etard. Ber. 15, 2233.
“ “ White-----	“-----	3.83, 15°-----	“ “
Hydrogen dithionate, or dithionic acid.	$\text{H}_2 \text{S}_2 \text{O}_6 + \text{aq.}$ -----	1.347-----	Gay Lussac. Gm. H. 2, 175.
Lithium dithionate-----	$\text{Li}_2 \text{S}_2 \text{O}_6 \cdot 2 \text{H}_2 \text{O}$ ----	2.158-----	Topsoë. C. C. 4, 76.
Sodium dithionate-----	$\text{Na}_2 \text{S}_2 \text{O}_6 \cdot 2 \text{H}_2 \text{O}$ ----	2.189-----	Topsoë. B. S. C. 19, 246.
“ “-----	“-----	2.175, 11°-----	Baker. C. N. 36, 203.
Potassium dithionate-----	$\text{K}_2 \text{S}_2 \text{O}_6$ -----	2.277-----	Topsoë. B. S. C. 19, 246.
Ammonium dithionate-----	$\text{Am}_2 \text{S}_2 \text{O}_6$ -----	1.704-----	Topsoë. C. C. 4, 76.
Silver dithionate-----	$\text{Ag}_2 \text{S}_2 \text{O}_6 \cdot 2 \text{H}_2 \text{O}$ ----	3.605-----	“ “
Magnesium dithionate-----	$\text{Mg S}_2 \text{O}_6 \cdot 6 \text{H}_2 \text{O}$ ----	1.666-----	Topsoë. B. S. C. 19, 246.
Zinc dithionate-----	$\text{Zn S}_2 \text{O}_6 \cdot 6 \text{H}_2 \text{O}$ ----	1.915-----	Topsoë. C. C. 4, 76.
Cadmium dithionate-----	$\text{Cd S}_2 \text{O}_6 \cdot 6 \text{H}_2 \text{O}$ ----	2.272-----	“ “
Calcium dithionate-----	$\text{Ca S}_2 \text{O}_6 \cdot 4 \text{H}_2 \text{O}$ ----	2.180-----	Topsoë. B. S. C. 19, 246.
“ “-----	“-----	2.176, 11°-----	Baker. C. N. 36, 203.
Strontium dithionate-----	$\text{Sr S}_2 \text{O}_6 \cdot 4 \text{H}_2 \text{O}$ ----	2.373-----	Topsoë. C. C. 4, 76.
Barium dithionate-----	$\text{Ba S}_2 \text{O}_6 \cdot 2 \text{H}_2 \text{O}$ ----	4.536, 13°.5--	Baker. C. N. 36, 203.
“ “-----	$\text{Ba S}_2 \text{O}_6 \cdot 4 \text{H}_2 \text{O}$ ----	3.142-----	Topsoë. C. C. 4, 76.
“ “-----	“-----	3.055, 24°.5--	Stephan. F. W. C.
Lead dithionate-----	$\text{Pb S}_2 \text{O}_6 \cdot 4 \text{H}_2 \text{O}$ ----	3.245-----	Topsoë. C. C. 4, 76.
“ “-----	“-----	3.259, 11°-----	Baker. C. N. 36, 203.
Manganese dithionate-----	$\text{Mn S}_2 \text{O}_6 \cdot 6 \text{H}_2 \text{O}$ ----	1.757-----	Topsoë. C. C. 4, 76.
Iron dithionate-----	$\text{Fe S}_2 \text{O}_6 \cdot 7 \text{H}_2 \text{O}$ ----	1.875-----	“ “
Nickel dithionate-----	$\text{Ni S}_2 \text{O}_6 \cdot 6 \text{H}_2 \text{O}$ ----	1.908-----	“ “
Cobalt dithionate-----	$\text{Co S}_2 \text{O}_6 \cdot 8 \text{H}_2 \text{O}$ ----	1.815-----	“ “

XXII. SULPHATES.

1st. Simple Sulphates.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Hydrogen sulphate, or sulphuric acid.	$\text{H}_2 \text{S O}_4$ -----	1.857-----	Bineau. Ann. (3), 24, 337.
“ “-----	“-----	1.8485-----	Ure. Schw. J. 35, 444.
“ “-----	“-----	1.854, 0°-----	Marignac. J. 6, 325.
“ “-----	“-----	1.842, 12°-----	
“ “-----	“-----	1.834, 24°-----	
“ “-----	“-----	1.857, 0°-----	Kolb. Z. A. C. 12, 333.
“ “-----	“-----	1.85289, 0°-----	Marignac. Ann. (4), 22, 420.
“ “-----	“-----	1.8354, 18°-----	Kohlrausch. P. A. 159, 243.
“ “-----	“-----	1.82730, 23°-----	Nasini. Ber. 15, 2885.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Hydrogen sulphate, or sulphuric acid.	$\text{H}_2 \text{S O}_4$ -----	1.854, 0° -----	Schertel. Ber. 15, 2734.
" "	" -----	1.8384, 15° -----	Lunge and Naef. Ber. 16, 953.
" "	" -----	1.83295, 19°.02	Mendelejeff. Ber. 17, ref. 304.
" "	" -----	1.8528, 0° -----	Mendelejeff. Ber. 19, 380.
" "	" -----	1.83904, 15°	Perkin. J. C. S. 49, 777.
" "	" -----	1.83562, 20°	
" "	" -----	1.83265, 25°	
" "	$\text{H}_2 \text{S O}_4 \cdot \text{H}_2 \text{O}$ -----	1.784, 8° -----	Wackenroder. J. 2, 249.
" "	" -----	1.7943, 0° -----	Mendelejeff. Ber. 19, 380.
" "	" -----	1.77806, 15°	Perkin. J. C. S. 49, 777.
" "	" -----	1.77423, 20°	
" "	" -----	1.77071, 25°	
" "	$\text{H}_2 \text{S O}_4 \cdot 2 \text{H}_2 \text{O}$ -----	1.62 -----	Watts' Dictionary.
" "	" -----	1.6655, 0° -----	Mendelejeff. Ber. 19, 380.
" "	" -----	1.65084, 15°	Perkin. J. C. S. 49, 777.
" "	" -----	1.64754, 20°	
" "	" -----	1.64467, 25°	
" "	$\text{H}_2 \text{S O}_4 \cdot 3 \text{H}_2 \text{O}$ -----	1.55064, 15°	" "
" "	" -----	1.54754, 20°	
" "	" -----	1.54493, 25°	
Hydrogen pyrosulphate	$\text{H}_2 \text{S}_2 \text{O}_7$ -----	1.9 -----	Watts' Dictionary.
Hydrogen tetrasulphate	$\text{H}_2 \text{S O}_4 + 3 \text{S O}_3$ -----	1.983 -----	Weber. P. A. 159, 325.
Lithium sulphate	$\text{Li}_2 \text{S O}_4$ -----	2.210 -----	Kremers. J. 10, 67.
" "	" -----	2.21, 15° -----	Brauner. P. M. (5), 11, 67.
" "	$\text{Li}_2 \text{S O}_4 \cdot \text{H}_2 \text{O}$ -----	2.02 -----	Troost. J. 10, 141.
" "	" -----	2.052, 21° -----	Pettersson. U. N. A. 1874.
" "	" -----	2.056, 20° -----	
" "	" -----	2.066, 20° -----	
Sodium sulphate	$\text{Na}_2 \text{S O}_4$ -----	2.462 -----	Mohs. Quoted by Schröder.
" "	" -----	2.67 -----	Breithaupt. Quoted by Schröder.
" "	" -----	2.73 -----	Cordier. Quoted by Schröder.
" "	" -----	2.640 -----	Thomson. Ann. Phil. (2), 10, 435.
" "	" -----	2.6313 -----	Karsten. Schw. J. 65, 394.
" "	" -----	2.597 -----	Playfair and Joule. M. C. S. 2, 401.
" "	" -----	2.629 -----	Filhol. Ann. (3), 21, 415.
" "	" -----	2.654 } -----	Kremers. J. 5, 15. Crystallized at different temperatures.
" "	" -----	2.658 } -----	
" "	" -----	2.674 } -----	
" "	" -----	2.684 } -----	
" "	" -----	2.693, m. of 3.	Schröder. P. A. 106, 226.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium sulphate	$\text{Na}_2 \text{S O}_4$	2.681, 20°.7	Favre and Valson. C. R. 77, 579.
"	"	2.677 } 17° {	Pettersson. U. N. A. 1874.
"	"	2.687 }	
"	"	2.66180, cryst. at 40°.	
"	"	2.66372, cryst. at 110°	Nicol. P. M. (5), 15, 94.
"	"	2.104, at the melting p't.	Braun. J. C. S. (2), 13, 31.
"	$\text{Na}_2 \text{S O}_4 \cdot 10 \text{H}_2 \text{O}$	1.4457	Hassenfratz. Ann. 28, 3.
"	"	1.350	Thomson. Ann. Phil. (2), 10, 435.
"	"	1.469, m. of 2	Playfair and Joule. M. C. S. 2, 401.
"	"	1.520	Filhol. Ann. (3), 21, 415.
"	"	1.465	Schiff.
"	"	1.471	Buignet. J. 14, 15.
"	"	1.4608	Stolba. J. P. C. 97, 503.
"	"	1.4595	
"	"	1.455, 26°.5	Favre and Valson. C. R. 77, 579.
"	"	1.485, 19°	Pettersson. U. N. A. 1874.
"	"	1.492, 20°	
Potassium sulphate	$\text{K}_2 \text{S O}_4$	2.636	Watson.
"	"	2.4073	Hassenfratz. Ann. 28, 3.
"	"	2.880	Thomson. Ann. Phil. (2), 10, 435.
"	"	2.6232	Karsten. Schw. J. 65, 394.
"	"	2.400	Jacquelain. A. C. P. 32, 234.
"	"	2.662	Kopp. A. C. P. 36, 1.
"	"	2.640	Playfair and Joule. M. C. S. 2, 401.
"	"	2.65606, 4°	Playfair and Joule. J. C. S. 1, 132.
"	"	2.625	Filhol. Ann. (3), 21, 415.
"	" Cryst.	2.644	Penny. J. 8, 333.
"	" After fusion.	2.657	
"	"	2.676	Holker. P. M. (3), 27, 213.
"	"	2.653	Schiff. A. C. P. 107, 64.
"	"	2.658	Schröder. P. A. 106, 226.
"	"	2.572	Buignet. J. 14, 15.
"	"	2.645	Stolba. J. P. C. 97, 503.
"	"	2.648	Topsoë and Christiansen.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Potassium sulphate	$K_2 S O_4$	2.660, 17°.1	Pettersson. U. N. A. 1874.
"	"	2.667, 18°.2	
"	"	2.669, 18°.2	
"	"	2.635, 18°.5	
"	"	2.653, 14°	
"	"	2.715	W. C. Smith. Am. J. P. 45, 148.
"	"	2.1, fused	Quinke. P. A. 138, 141.
"	"	2.6651, 0°	Spring. Ber. 15, 1940. Details in Bull. Acad. Belgique IV., No. 8, 1882.
"	"	2.6627, 10°	
"	"	2.6603, 20°	
"	"	2.6577, 30°	
"	"	2.6551, 40°	
"	"	2.6522, 50°	
"	"	2.6492, 60°	
"	"	2.6456, 70°	
"	"	2.6420, 80°	
"	"	2.6366, 90°	
"	"	2.6311, 100°	Spring. Ber. 16, 2724.
"	Not pressed	2.653, 21°	
"	Once "	2.651, 22°	
"	Twice "	2.656, 22°	Jacquelin. A. C. P. 32, 234.
Potassium pyrosulphate	$K_2 S_2 O_7$	2.277	Pettersson. U. N. A. 1874.
Rubidium sulphate	$Rb_2 S O_4$	3.639, 16°.8	Spring. Ber. 15, 1940. Details in Bull. Acad. Belgique IV., No. 8, 1882.
"	"	3.641, 16°.8	
"	"	3.6438, 0°	
"	"	3.6402, 10°	
"	"	3.6367, 20°	
"	"	3.6333, 30°	
"	"	3.6299, 40°	
"	"	3.6256, 50°	
"	"	3.6220, 60°	
"	"	3.6181, 70°	
"	"	3.6142, 80°	Pettersson. U. N. A. 1874.
"	"	3.6089, 90°	
"	"	3.6036, 100°	
Cæsium sulphate	$Cs_2 S O_4$	4.105, 19°.2	Hassenfratz. Ann. 28, 3.
Ammonium sulphate	$Am_2 S O_4$	1.7676	Kopp. J. 11, 10.
"	"	1.76	Playfair and Joule. M. C. S. 2, 401.
"	"	1.78	
"	"	1.750	Playfair and Joule. J. C. S. 1, 138.
"	"	1.76147, 4°	Schiff. A. C. P. 107, 64.
"	"	1.628	Schröder. P. A. 106, 226.
"	"	1.771, m. of 2	Buignet. J. 14, 15.
"	"	1.750	Pettersson. U. N. A. 1874.
"	"	1.770, m. of 4	
"	"	1.766 } extremes	
"	"	1.775 } 17°.9-18°.6	W. C. Smith. Am. J. P. 53, 145.
"	"	1.7	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ammonium sulphate	$\text{Am}_2 \text{S O}_4$	1.765, 20°.5	Wilson. F. W. C Schröder. Ber. 11, 2211.
"	"	1.773	
"	"	1.7763, 0°	
"	"	1.7748, 10°	
"	"	1.7734, 20°	
"	"	1.7719, 30°	
"	"	1.7703, 40°	
"	"	1.7685, 50°	
"	"	1.7667, 60°	
"	"	1.7641, 70°	
"	"	1.7617, 80°	Spring. Ber. 15, 1940. Details in Bull. Acad. Bel gique. IV., No. 8, 1882.
"	"	1.7593, 90°	
"	"	1.7567, 100°	
"	Not pressed	1.773, 20°	
"	Once	1.750, 22°	
"	Twice	1.760, 22°	
Mascagnite	$\text{Am}_2 \text{S O}_4 \cdot \text{H}_2 \text{O}$	1.72—1.73	
Silver sulphate	$\text{Ag}_2 \text{S O}_4$	5.341	Dana's Mineralogy. Karsten. Schw. J. 65, 394. Playfair and Joule. M. C. S. 2, 401. Filhol. Ann. (3), 21, 415. Schröder. P. A. 106, 226. Pettersson. U. N. A. 1874.
"	"	5.322	
"	"	5.410	
"	"	5.425	
"	"	5.49	
"	"	5.54	
Thallium sulphate	$\text{Tl}_2 \text{S O}_4$	6.77	
"	"	6.603	
"	"	6.79, 17°.8	
"	"	6.81, 17°.2	
"	"	6.83, 17°	Pettersson. U. N. A. 1874. Nilson and Petters- son. C. R. 91, 232. Topsoë. C. C. 4, 76. H. Stallo. F. W. C. Nilson and Petters- son. C. R. 91, 232. Karsten. Schw. J. 65, 394. Playfair and Joule. M. C. S. 2, 401. Filhol. Ann. (3), 21, 415. Pape. P. A. 120, 367. Pettersson. U. N. A. 1876. Schröder. J. P. C. (2), 19, 266. Two modifications. Thorpe and Watts. J. C. S. 37, 102. Bischof. Dana's Min.
Glucinum sulphate	Gl S O_4	2.443	
"	$\text{Gl S O}_4 \cdot 4 \text{H}_2 \text{O}$	1.725	
"	"	1.6743, 22°	
"	"	1.713	
Magnesium sulphate	Mg S O_4	2.6066	
"	"	2.706, m. of 2	
"	"	2.628	
"	"	2.675, 16°	
"	"	2.770, 13°.8	
"	"	2.795, 14°	
"	"	2.488	
"	"	2.471	
"	"	2.829	
"	"	2.709, 15°	
"	$\text{Mg S O}_4 \cdot \text{H}_2 \text{O}$	2.517, native	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Magnesium sulphate -----	$\text{Mg S O}_4 \cdot \text{H}_2 \text{O}$ -----	2.281, 16° -----	Pape. P. A. 120, 369.
" " -----	" -----	2.339, 14° -----	Pettersson. U. N. A. 1876.
" " -----	" -----	2.340, 16°.5 -----	
" " -----	" -----	2.385 -----	Schröder. J. P. C. (2), 19, 266.
" " -----	" -----	2.478, m. of 2 -----	Playfair. J. C. S. 37, 102.
" " -----	" -----	2.445, 15° -----	Thorpe and Watts. J. C. S. 37, 102.
" " -----	$\text{Mg S O}_4 \cdot 2 \text{H}_2 \text{O}$ -----	2.279 -----	Playfair. J. C. S. 37, 102.
" " -----	" -----	2.373, 15° -----	Thorpe and Watts. J. C. S. 37, 102.
" " -----	$\text{Mg S O}_4 \cdot 5 \text{H}_2 \text{O}$ -----	1.869, m. of 2 -----	Playfair. J. C. S. 37, 102.
" " -----	$\text{Mg S O}_4 \cdot 6 \text{H}_2 \text{O}$ -----	1.751 -----	" "
" " -----	" -----	1.734, 15° -----	Thorpe and Watts. J. C. S. 37, 102.
" Two modi- -----	" -----	1.6151 -----	Schulze. P. A. (2), 31, 229.
" fications. -----	" -----	1.8981 -----	
" " -----	$\text{Mg S O}_4 \cdot 7 \text{H}_2 \text{O}$ -----	1.6603 -----	Hassenfratz. Ann. 28, 3.
" " -----	" -----	1.751 -----	Mohs. See Böttger.
" " -----	" -----	1.674 -----	Kopp. A. C. P. 36, 1.
" " -----	" -----	1.660 -----	Playfair and Joule. M. C. S. 2, 401.
" " -----	" -----	1.6829, 4° -----	Playfair and Joule. J. C. S. 1, 138.
" " -----	" -----	1.751 -----	Filhol. Ann. (3), 21, 415.
" " -----	" -----	1.685 -----	Schiff. A. C. P. 107, 64.
" " -----	" -----	1.675 -----	Buignet. J. 14, 15.
" " -----	" -----	1.636, 15°.5 -----	Forbes. P. M. 32, 135.
" " -----	" -----	1.665, 15°.5 -----	Holker. P. M. (3), 27, 213.
" " -----	" -----	1.701, 16° -----	Pape. P. A. 120, 373.
" " -----	" -----	1.684, 15°.4 -----	Pettersson. U. N. A. 1876.
" " -----	" -----	1.691, 15°.5 -----	
" " -----	" -----	1.680 -----	Schröder. Dm. 1873.
" " -----	" -----	1.675 -----	Schröder. J. P. C. (2), 19, 266.
" " -----	" -----	1.632 -----	W. C. Smith. Am. J. P. 53, 148.
" " -----	" -----	1.678, 15° -----	Thorpe and Watts. J. C. S. 37, 102.
Zinc sulphate -----	Zn S O_4 -----	3.681, m. of 2 -----	Playfair and Joule. M. C. S. 2, 401.
" " -----	" -----	3.400 -----	Karsten. Schw. J. 65, 394.
" " -----	" -----	3.400 -----	Filhol. Ann. (3), 21, 415.
" " -----	" -----	3.435, 16° -----	Pape. P. A. 120, 367.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Zinc sulphate	Zn S O_4	3.520	Schröder. J. P. C. (2), 19, 266. Thorpe and Watts. J. C. S. 37, 102.
"	"	3.552	
"	"	3.580	
"	"	3.6235, 15°	
"	$\text{Zn S O}_4 \cdot \text{H}_2 \text{O}$	3.215, 16°	Pape. P. A. 120, 369.
"	"	3.076	Schröder. J. P. C. (2), 19, 266.
"	"	3.259	Playfair. J. C. S. 37, 102.
"	"	3.2845, 15°	Thorpe and Watts. J. C. S. 37, 102.
"	$\text{Zn S O}_4 \cdot 2 \text{H}_2 \text{O}$	2.958, 15°	" "
"	$\text{Zn S O}_4 \cdot 5 \text{H}_2 \text{O}$	2.206, 15°	" "
"	$\text{Zn S O}_4 \cdot 6 \text{H}_2 \text{O}$	2.056	Playfair. J. C. S. 37, 102.
"	"	2.072, 15°	Thorpe and Watts. J. C. S. 37, 102.
"	$\text{Zn S O}_4 \cdot 7 \text{H}_2 \text{O}$	1.912	Hassenfratz. Ann. 28, 3.
"	"	2.036	Mohs. See Böttger.
"	"	1.931, m. of 4	Playfair and Joule. M. C. S. 2, 401.
"	"	2.036	Filhol. Ann. (3), 21, 415.
"	"	1.953	Schiff. A. C. P. 107, 64.
"	"	1.957	Buignet. J. 14, 15.
"	"	1.9534	Stolba. J. P. C. 97, 503.
"	"	1.976, 15°.5	Holker. P. M. (3), 27, 213.
"	"	1.901, 16°	Pape. P. A. 120, 374.
"	"	2.015	Schröder. Dm. 1873.
"	"	1.953	Schröder. J. P. C. (2), 19, 266.
"	"	1.955	
"	"	1.961	W. C. Smith. Am. J. P. 53, 148.
"	"	1.974, 15°	Thorpe and Watts. J. C. S. 37, 102.
Cadmium sulphate	Cd S O_4	4.447	Schröder. J. P. C. (2), 19, 266.
"	$\text{Cd S O}_4 \cdot \text{H}_2 \text{O}$	2.939	Buignet. J. 14, 15.
"	$3 \text{Cd S O}_4 \cdot 8 \text{H}_2 \text{O}$	3.05, 12°	Giesecke. B. D. Z.
Mercurous sulphate	$\text{Hg}_2 \text{S O}_4$	7.560	Playfair and Joule. M. C. S. 2, 401.
Mercuric sulphate	Hg S O_4	6.466	" "
Calcium sulphate	Ca S O_4	2.9271	Karsten. Schw. J. 65, 394.
"	"	2.955	Neumann. P. A. 23, 1.
"	"	3.102	Filhol. Ann. (3), 21, 415.
"	" Artificial cryst.	2.969	Manross. J. 5, 9.
"	" Anhydrite	2.983	Schrauf. J. 15, 756.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Calcium sulphate. Anhydrite.	Ca S O_4	2.92, 15°	Fuchs. J. 15, 755.
"	"	2.736	Two lots. Schröder. Dm. 1873.
"	"	2.759	
"	"	2.884	
"	"	2.98	
" Artificial cryst.	"		Gorgeu. Ann. (6), 4, 515.
"	$2 \text{ Ca S O}_4 \cdot \text{H}_2 \text{O}$	2.757	Johnston. P. M. (2), 13, 325.
"	$\text{Ca S O}_4 \cdot 2 \text{H}_2 \text{O}$	2.322	Leroyer and Dumas.
"	"	2.310	Mohs.
"	"	2.307	Breithaupt. Schw. J. 68, 291.
"	"	2.331	Filhol. Ann. (3), 21, 415.
" Gypsum	"	2.317, m. of 15	Kenngott. J. 6, 844.
"	"	2.3057	Stolba. J. P. C. 97, 503.
" Powder	"	2.2745, 19°.4	Pettersson. U. N. A. 1874.
"	"	2.3228, 18°.2	
" Splinters	"	2.3086, 18°	
"	"	2.3223, 18°	
Strontium sulphate. Celestite.	Sr S O_4	3.973	Breithaupt. Dana's Min.
"	"	3.9593	Beudant. Dana's Min.
"	"	3.96	Hunt. Dana's Min.
"	"	3.86	Mohs.
"	"	3.962, 15°	Kopp.
"	"	3.955	Neumann. P. A. 23, 1.
" Artificial cryst.	"	3.927	Manross. J. 5, 9.
"	"	3.949	Schröder. P. A. Ergänzung. Bd. 6, 622.
" Ppt.	"	3.5883	Karsten. Schw. J. 65, 394.
"	"	3.770	Filhol. Ann. (3), 21, 415.
"	"	3.707	Schröder. P. A. 106, 226.
" Ppt. ignited.	"	3.6679	Schweitzer. Proc. Amer. Asso. 1877, 201.
"	"	3.6949	
" unignited.	"	3.7383	
"	"	3.9502	
"	"	3.9514	
"	"	3.9702	
" Artif. cryst	"	3.9	Gorgeu. Ann. (6), 4, 515.
Barium sulphate	Ba S O_4	4.42	Breithaupt.
"	"	4.446	Mohs. See Böttger.
"	"	4.2003	Karsten. Schw. J. 65, 394.
"	"	4.4695, 0°	Kopp.
" Barite	"	4.429	Neumann. P. A. 23, 1.
"	"	4.4773	G. Rose. P. A. 75 409.
"	"	4.4872	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Barium sulphate. Barite }	Ba S O_4 -----	4.4794 }	} G. Rose. P. A. 75, 409.
" " powder. }	"-----	4.4804 }	
" " Precip.-----	"-----	4.5271 }	
" " "-----	"-----	4.5253 }	
" " Artif. cryst.	"-----	4.179-----	Manross. J. 5, 9.
" "-----	"-----	4.022 }	} Precipitates in dif- ferent conditions. Schröder. P. A. 106, 226.
" "-----	"-----	4.065 }	
" "-----	"-----	4.512 }	
" "-----	"-----	4.512 }	
" " Ppt. ignited.	"-----	4.2942 }	} 18° { Schweitzer. Univer- sity of Missouri. Special pub., 1876.
" " Ppt. dried at 95°.	"-----	4.2688 }	
" " Ppt.-----	"-----	4.4591 }	
" " "-----	"-----	4.4881 }	
" " "-----	"-----	4.3958 }	} 14°.9 { E. Wiedemann. P. M. (5), 15, 371.
" " "-----	"-----	4.3969 }	
" " "-----	"-----	4.3962 }	
" " "-----	"-----	4.3967 }	
" " Artif. cryst.	"-----	4.44—4.50-----	Gorgeu. Ann. (6), 4, 515.
Lead sulphate-----	Pb S O_4 -----	6.298-----	Mohs.
" "-----	"-----	6.1691-----	Karsten. Schw. J. 65, 394.
" "-----	"-----	6.30-----	Filhol. Ann. (3), 21, 415.
" "-----	"-----	6.35-----	Smith. J. 8, 969.
" "-----	"-----	6.20-----	Field. J. 14, 1022.
" " Native-----	"-----	6.329-----	} Schröder. P. A. Er- ganz. Bd. 6, 622.
" " Precip.-----	"-----	6.212-----	
" "-----	"-----	5.96, 17°.1-----	} Pettersson. U. N. A. 1874.
" "-----	"-----	5.97, 16°.8-----	
" " Artif. cryst.	"-----	6.16-----	Gorgeu. Ann. (6), 4, 515.
Manganese sulphate-----	Mn S O_4 -----	3.1, 14°-----	Bödeker. B. D. Z.
" "-----	"-----	3.192, 16°-----	Pape. P. A. 120, 368.
" "-----	"-----	2.954-----	Schröder. Dm. 1873.
" "-----	"-----	2.975-----	Schröder. J. P. C. (2), 19, 266.
" "-----	"-----	3.235, 14°.6 }	} Pettersson. U. N. A. 1876.
" "-----	"-----	3.260, 14° }	
" "-----	"-----	3.386-----	Playfair. J. C. S. 37, 102.
" "-----	"-----	3.282, 15°-----	Thorpe and Watts. J. C. S. 37, 102.
" "-----	$\text{Mn S O}_4 \cdot \text{H}_2 \text{O}$ -----	2.870, 14°.2 }	} Pettersson. U. N. A. 1876.
" "-----	"-----	2.903, 15°.4 }	
" "-----	"-----	2.905, 14°.9 }	
" "-----	"-----	3.210-----	
" "-----	"-----	2.845, 15°-----	Thorpe and Watts. J. C. S. 37, 102.
" " Szmikite-----	"-----	3.15-----	Schröckinger. J. 30, 1296.
" "-----	$\text{Mn S O}_4 \cdot 2 \text{H}_2 \text{O}$ -----	2.526, 15°-----	Thorpe and Watts. J. C. S. 37, 102.
" "-----	$\text{Mn S O}_4 \cdot 3 \text{H}_2 \text{O}$ -----	2.356, 15°-----	" "
" "-----	$\text{Mn S O}_4 \cdot 4 \text{H}_2 \text{O}$ -----	2.261-----	Topsoë. C. C. 4, 76

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Manganese sulphate -----	$\text{Mn S O}_4 \cdot 5 \text{ H}_2 \text{ O}$ -----	1.834 -----	Gmelin.
" " -----	" -----	2.087 -----	Kopp. A. C. P. 36, 1.
" " -----	" -----	2.095 -----	
" " -----	" -----	2.059, 16° -----	Pape. P. A. 120, 372.
" " -----	" -----	2.099, 16°.2 -----	Pettersson. U. N. A. 1876.
" " -----	" -----	2.103, 17°.6 -----	
" " -----	" -----	2.107, 15°.2 -----	
" " -----	" -----	2.103, 15° -----	Thorpe and Watts. J. C. S. 37, 102.
Ferrous sulphate -----	Fe S O_4 -----	2.841 -----	Filhol. Ann. (3), 21, 415.
" " -----	" -----	3.138 -----	Playfair and Joule. M. C. S. 2, 401.
" " -----	" -----	3.48 -----	Playfair. J. C. S. 37, 102.
" " -----	" -----	3.346, 15° -----	Thorpe and Watts. J. C. S. 37, 102.
" " -----	$\text{Fe S O}_4 \cdot \text{H}_2 \text{ O}$ -----	3.047 -----	Playfair. J. C. S. 37, 102.
" " -----	" -----	2.994, 15° -----	Thorpe and Watts. J. C. S. 37, 102.
" " -----	$\text{Fe S O}_4 \cdot 2 \text{ H}_2 \text{ O}$ -----	2.773, 15° -----	" "
" " -----	$\text{Fe S O}_4 \cdot 3 \text{ H}_2 \text{ O}$ -----	2.268, 16° -----	Pape. P. A. 120, 371.
" " -----	$\text{Fe S O}_4 \cdot 4 \text{ H}_2 \text{ O}$ -----	2.227, 15° -----	Thorpe and Watts. J. C. S. 37, 102.
" " -----	$\text{Fe S O}_4 \cdot 7 \text{ H}_2 \text{ O}$ -----	1.8399 -----	Hassenfratz. Ann. 28, 3.
" " -----	" -----	1.857, m. of 3 -----	Playfair and Joule. M. C. S. 2, 401.
" " -----	" -----	1.8889, 4° -----	Playfair and Joule. J. C. S. 1, 138.
" " -----	" -----	1.904 -----	Filhol. Ann. (3), 21, 415.
" " -----	" -----	1.884 -----	Schiff. A. C. P. 107, 64.
" " -----	" -----	1.902 -----	Buignet. J. 14, 15.
" " -----	" -----	1.851, 15°.5 -----	Holker. P. M. (3), 27, 214.
" " -----	" -----	1.9854, 16° -----	Pape. P. A. 120, 372.
" " -----	" -----	1.881 -----	Schröder. Dm. 1873
" " -----	" -----	1.897 -----	Schröder. J. P. C. (2), 19, 266.
" " -----	" -----	1.896 -----	W. C. Smith. Am. J. P. 53, 145.
Ferric sulphate -----	$\text{Fe}_2 (\text{S O}_4)_3$ -----	3.097, 18° -----	Pettersson. U. N. A. 1874.
" " -----	" -----	3.098, 18°.5 -----	
" " -----	" -----	3.103, 18°.2 -----	
Coquimbite -----	$\text{Fe}_2 (\text{S O}_4)_3 \cdot 9 \text{ H}_2 \text{ O}$ -----	2.0—2.1 -----	Dana's Mineralogy.
" -----	" -----	2.092 -----	Breithaupt. See Z. K. M. 3, 520.
Ihleite -----	$\text{Fe}_2 (\text{S O}_4)_3 \cdot 12 \text{ H}_2 \text{ O}$ -----	1.812 -----	Schrauf. N. J. 1877, 252.
Nickel sulphate -----	Ni S O_4 -----	3.643, 16° -----	Pape. P. A. 120, 369.
" " -----	" -----	3.652 -----	Schröder. J. P. C. (2), 19, 266.
" " -----	" -----	3.696 -----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Nickel sulphate	Ni S O_4	3.526	Playfair. J. C. S. 37, 102.
" "	"	3.418, 15°	Thorpe and Watts. J. C. S. 37, 102.
" "	$\text{Ni S O}_4 \cdot 6 \text{ H}_2 \text{ O}$	2.042	Topsoë. C. C. 4, 76.
" "	"	2.074	
" "	"	2.031, 15°	
" "	$\text{Ni S O}_4 \cdot 7 \text{ H}_2 \text{ O}$	2.037	Thorpe and Watts. J. C. S. 37, 102.
" "	"	1.931	Kopp. A. C. P. 36, 1.
" "	Morenosite	"	Schiff. A. C. P. 107, 64.
" "	"	2.004	Fulda. J. 17, 859.
" "	"	1.877, 16°	Pape. P. A. 120, 373.
" "	"	1.955, 14°	Pettersson. U. N. A. 1876.
" "	"	1.949, 15°	Thorpe and Watts. J. C. S. 37, 102.
Cobalt sulphate	Co S O_4	3.531	Playfair and Joule. M. C. S. 2, 401.
" "	"	3.614, 15°.6	Pettersson. U. N. A. 1876.
" "	"	3.615, 16°	
" "	"	3.444	Playfair. J. C. S. 37, 102.
" "	"	3.472, 15°	Thorpe and Watts. J. C. S. 37, 102.
" "	$\text{Co S O}_4 \cdot \text{H}_2 \text{ O}$	3.125, 15°	" "
" "	$\text{Co S O}_4 \cdot 2 \text{ H}_2 \text{ O}$	2.712	Playfair. J. C. S. 37, 102.
" "	"	2.668, 15°	Thorpe and Watts. J. C. S. 37, 102.
" "	$\text{Co S O}_4 \cdot 4 \text{ H}_2 \text{ O}$	2.327, 15°	" "
" "	$\text{Co S O}_4 \cdot 5 \text{ H}_2 \text{ O}$	2.134, 15°	" "
" "	$\text{Co S O}_4 \cdot 6 \text{ H}_2 \text{ O}$	2.019, 15°	" "
" "	$\text{Co S O}_4 \cdot 7 \text{ H}_2 \text{ O}$	1.924	Schiff. A. C. P. 107, 64.
" "	"	1.958, 15°.6	Pettersson. U. N. A. 1876.
" "	"	1.964, 15°.5	
" "	"	1.958	Schröder. J. P. C. (2), 19, 266.
" "	"	1.918, 15°	Thorpe and Watts. J. C. S. 37, 102.
Copper sulphate	Cu S O_4	3.631	Playfair and Joule. M. C. S. 2, 401.
" "	"	3.572	Karsten. Schw. J. 65, 394.
" "	"	3.530	Filhol. Ann. (3), 21, 415.
" "	"	3.527, 16°	Pape. P. A. 120, 368.
" "	"	3.707, 19°	Favre and Valson. C. R. 77, 579.
" "	"	3.82, 17°.1	Pettersson. U. N. A. 1874.
" "	"	3.83, 18°	
" "	"	3.651, 11°	Hampe. Z. C. 13, 367.
" "	"	3.83	Schröder. J. P. C. (2), 19, 266.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Copper sulphate	Cu S O_4	3.606, 15°	Thorpe and Watts. J. C. S. 37, 102.
" "	$\text{Cu S O}_4 \cdot \text{H}_2 \text{O}$	3.125, 16°	Pape. P. A. 120, 370.
" "	"	3.235, 17°.2	Pettersson. U. N. A. 1874.
" "	"	3.239, 18°.1	
" "	"	3.246, 18°	
" "	"	3.038	Schröder. J. P. C. (2), 19, 266.
" "	"	3.206	Playfair. J. C. S. 37, 102.
" "	"	3.289, 15°	Thorpe and Watts. J. C. S. 37, 102.
" "	$\text{Cu S O}_4 \cdot 2 \text{H}_2 \text{O}$	2.808, 16°	Pape. P. A. 120, 371.
" "	"	2.878	Playfair. J. C. S. 37, 102.
" "	"	2.891	
" "	"	2.953, 15°	Thorpe and Watts. J. C. S. 37, 102.
" "	$\text{Cu S O}_4 \cdot 3 \text{H}_2 \text{O}$	2.663, 15°	" "
" "	$2 \text{Cu S O}_4 \cdot 7 \text{H}_2 \text{O}$	2.648, 15°	" "
" "	$\text{Cu S O}_4 \cdot 5 \text{H}_2 \text{O}$	2.1943	Hassenfratz. Ann. 28, 3.
" "	"	2.2	Gmelin.
" " Native	"	2.297	Breithaupt. J. P. C. 11, 151.
" "	"	2.274	Kopp. A. C. P. 36, 1.
" "	"	2.254	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.286	Filhol. Ann. (3), 21, 415.
" "	"	2.2422	Playfair and Joule. J. C. S. 1, 138.
" "	"	2.2781	
" "	"	2.2901	
" "	"	2.302	Buignet. J. 14, 15.
" "	"	2.2778	Stolba. J. P. C. 97, 503.
" "	"	2.268, 16°	Pape. P. A. 120, 371.
" "	"	2.248, 18°.9	Favre and Valson. C. R. 77, 579.
" "	"	2.286, 19°.4	Pettersson. U. N. A. 1874.
" "	"	2.292, 20°	
" "	"	2.277	Schröder. Dm. 1873.
" "	"	2.263	Schröder. J. P. C. (2), 19, 266.
" "	"	2.296	
" "	"	2.330	Rüdorff. Ber. 12, 251.
" "	"	2.212	W. C. Smith. Am. J. P. 53, 145.
" "	"	2.284, 15°	Thorpe and Watts. J. C. S. 37, 102.
Chromic sulphate	$\text{Cr}_2 (\text{S O}_4)_3$	2.743, 17°.2	Favre and Valson. C. R. 77, 579.
" "	"	3.012	Nilson and Petters- son. C. R. 91, 232.
" "	$\text{Cr}_2 (\text{S O}_4)_3 \cdot 15 \text{H}_2 \text{O}$	1.696, 22°	Schrötter. P. A. 53, 513.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Chromic sulphate -----	$\text{Cr}_2 (\text{S O}_4)_3 \cdot 15 \text{H}_2 \text{O}$	1.867, 17°.2---	Favre and Valson. C. R. 77, 579.
Aluminum sulphate -----	$\text{Al}_2 (\text{S O}_4)_3$ -----	2.7400 -----	Karsten. Schw. J. 65, 394.
" " -----	" -----	2.171 -----	Playfair and Joule. M. C. S. 2, 401.
" " -----	" -----	2.672, 22°.5---	Favre and Valson. C. R. 77, 579.
" " -----	" -----	2.710 } 17° {	Pettersson. U. N. A. 1874.
" " -----	" -----	2.716 }	
" " -----	$\text{Al}_2 (\text{S O}_4)_3 \cdot 18 \text{H}_2 \text{O}$	1.671, m. of 2-	Playfair and Joule. M. C. S. 2, 401.
" " -----	" -----	1.569 -----	Filhol. Ann. (3), 21, 415.
" " -----	" -----	1.767, 22°.1---	Favre and Valson. C. R. 77, 579.
Indium sulphate -----	$\text{In}_2 (\text{S O}_4)_3$ -----	3.438 -----	Nilson and Petters- son. C. R. 91, 232.
Scandium sulphate -----	$\text{Sc}_2 (\text{S O}_4)_3$ -----	2.579 -----	" "
Yttrium sulphate -----	$\text{Y}_2 (\text{S O}_4)_3$ -----	2.606, 19°.4 }	Pettersson. U. N. A. 1876.
" " -----	" -----	2.615, 15° }	
" " -----	" -----	2.626, 19°.3 }	Nilson and Petters- son. C. R. 91, 232.
" " -----	" -----	2.612 -----	
" " -----	$\text{Y}_2 (\text{S O}_4)_3 \cdot 8 \text{H}_2 \text{O}$	2.52 -----	Cleve and Hoeglund. B. S. C. 18, 200.
" " -----	" -----	2.53 -----	Topsoë. Quoted by Pettersson.
" " -----	" -----	2.531, 19°.6 }	Pettersson. U. N. A. 1876.
" " -----	" -----	2.537, 19°.4 }	
" " -----	" -----	2.552, 15° }	Nilson and Petters- son. C. R. 91, 232.
" " -----	" -----	2.540 -----	
Erbium sulphate -----	$\text{Er}_2 (\text{S O}_4)_3$ -----	3.518, 14°.5 }	Pettersson. U. N. A. 1876.
" " -----	" -----	3.524, 14°.2 }	
" " -----	" -----	3.678 -----	Nilson and Petters- son. C. R. 91, 232.
" " -----	$\text{Er}_2 (\text{S O}_4)_3 \cdot 8 \text{H}_2 \text{O}$	3.17 -----	Cleve and Hoeglund. B. S. C. 18, 200.
" " -----	" -----	3.230, 16°.4 }	Pettersson. U. N. A. 1876.
" " -----	" -----	3.242, 16°.6 }	
" " -----	" -----	3.248, 17°.1 }	Nilson and Petters- son. C. R. 91, 232.
" " -----	" -----	3.180 -----	
Ytterbium sulphate -----	$\text{Yb}_2 (\text{S O}_4)_3$ -----	3.793 -----	" "
" " -----	$\text{Yb}_2 (\text{S O}_4)_3 \cdot 8 \text{H}_2 \text{O}$	3.286 -----	" "
Lanthanum sulphate -----	$\text{La}_2 (\text{S O}_4)_3$ -----	3.53, 13°.6-- }	Pettersson. U. N. A. 1876.
" " -----	" -----	3.67, 15°.4-- }	
" " -----	" -----	3.600 -----	Nilson and Petters- son. C. R. 91, 232.
" " -----	" -----	3.544 } 15° {	Brauner. S. W. A. June, 1882.
" " -----	" -----	3.545 }	
" " -----	$\text{La}_2 (\text{S O}_4)_3 \cdot 9 \text{H}_2 \text{O}$	2.827 -----	Topsoë. Quoted by Pettersson.
" " -----	" -----	2.848, 17°.2 }	Pettersson. U. N. A. 1876.
" " -----	" -----	2.864, 17°.4 }	
" " -----	" -----	2.853 -----	Nilson and Petters- son. C. R. 91, 232.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Cerium sulphate-----	$\text{Ce}_2 (\text{S O}_4)_3$ -----	3.916, 12°.5---	Pettersson. U. N. A. 1876.
“ “-----	“-----	3.912-----	Nilson and Pettersson. C. R. 91, 232.
“ “-----	$\text{Ce}_2 (\text{S O}_4)_3 \cdot 5 \text{H}_2 \text{O}$ ---	3.214, 14°.2 }-----	Pettersson. U. N. A. 1876.
“ “-----	“-----	3.232, 14° }-----	
“ “-----	“-----	3.220-----	Nilson and Pettersson. C. R. 91, 232.
Didymium sulphate-----	$\text{Di}_2 (\text{S O}_4)_3$ -----	3.722, 14°.6 }-----	Pettersson. U. N. A. 1876.
“ “-----	“-----	3.756, 15°.6 }-----	
“ “-----	“-----	3.735-----	Nilson and Pettersson. C. R. 91, 232.
“ “-----	“-----	3.662 }-----	{ Cleve. U. N. A. 1885.
“ “-----	“-----	3.672 }-----	
“ “-----	$\text{Di}_2 (\text{S O}_4)_3 \cdot 8 \text{H}_2 \text{O}$ ---	2.82-----	Cleve and Hoeglund. B. S. C. 18, 200.
“ “-----	“-----	2.877, 16°.4 }-----	Pettersson. U. N. A. 1876.
“ “-----	“-----	2.886, 14°.8 }-----	
“ “-----	“-----	2.878-----	Nilson and Pettersson. C. R. 91, 262.
“ “-----	“-----	2.827, 14°.8 }-----	Cleve. U. N. A. 1885.
“ “-----	“-----	2.828, 16°.2 }-----	
“ “-----	“-----	2.831, 16° }-----	
Samarium sulphate-----	$\text{Sm}_2 (\text{S O}_4)_3$ -----	3.898, 18°.3---	“ “
“ “-----	$\text{Sm}_2 (\text{S O}_4)_3 \cdot 8 \text{H}_2 \text{O}$ ---	2.928 }-----	“ “
“ “-----	“-----	2.932 }-----	
Thorium sulphate-----	$\text{Th} (\text{S O}_4)_2$ -----	4.053, 22°.8---	Clarke. A. C. J. 2, 175.
“ “-----	“-----	4.2252, 17°---	Krüss and Nilson. Ber. 20, 1675.
“ “-----	$2 \text{Th} (\text{S O}_4)_2 \cdot 9 \text{H}_2 \text{O}$ ---	3.398, 24°---	Clarke. A. C. J. 2, 175.
“ “-----	$\text{Th} (\text{S O}_4)_2 \cdot 9 \text{H}_2 \text{O}$ ---	2.767-----	Topsoë. B. S. C. 21, 120.
Uranyl sulphate-----	$\text{U O}_2 \cdot \text{S O}_4 \cdot 3 \text{H}_2 \text{O}$ ---	3.280, 16°.5---	H. Schmidt. F. W. C.

2d. Double and Triple Sulphates.*

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium hydrogen sulphate	Na H S O_4 -----	2.742-----	Playfair and Joule. M. C. S. 2, 401.
Potassium hydrogen sulphate.	K H S O_4 -----	2.112-----	Thomson. Ann. Phil. (2), 10, 435.
“ “-----	“-----	2.163-----	Jacquelin. A. C. P. 32, 234.
“ “-----	“-----	2.475, m. of 2-----	Playfair and Joule. M. C. S. 2, 401.
“ “-----	“-----	2.47767, 4°---	Playfair and Joule. J. C. S. 1, 138.

* Exclusive of basic or partly basic double sulphates.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Potassium hydrogen sulphate.	$K H S O_4$	2.305, cryst.	} Schröder. Dm. 1873.
" " "	"	2.354 } cryst.	
" " "	"	2.355 } mass.	
" " "	"	2.091, after fusion.	
" " "	"	2.245, cryst.	Wyrouboff. B. S. M. 7, 7.
Ammonium hydrogen sulphate.	$Am H S O_4$	1.761, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" " "	"	1.787	Schiff. A. C. P. 107, 64.
Sodium potassium sulphate.	$Na_2 S O_4 \cdot 3 K_2 S O_4$	2.668	} Two lots. Penny. J. 8, 333.
" " "	"	2.671	
Lithium ammonium sulphate.	$Am Li S O_4$	1.164 } two mod	} Wyrouboff. B. S. M. 5, 42.
" " "	"	1.204 } ifications	
Sodium ammonium sulphate.	$Am Na S O_4 \cdot 2 H_2 O$	1.63	Schiff. A. C. P. 114, 68.
Potassium ammonium sulphate.	$Am K S O_4$	2.280	Schiff. A. C. P. 107, 64.
Guanovulite	$Am_2 K_7 H_3 (S O_4)_6 \cdot 4 H_2 O$	2.33 }	} Wibel. Ber. 7, 393.
"	"	2.65 }	
Glauberite	$Na_2 Ca (S O_4)_2$	2.767	Breithaupt. Schw. J. 68, 291.
"	"	2.64	Ulex. J. 2, 776.
Syngenite	$K_2 Ca (S O_4)_2 \cdot H_2 O$	2.603, 17°.5	Zepharovich. J. 25, 1143.
"	"	2.252	Rumpf. Dana's Min., 2d Supp.
Dreelite	$Ca S O_4 \cdot 3 Ba S O_4$	3.2—3.4	Dana's Mineralogy.
Polyhalite	$K_2 Ca_2 Mg (S O_4)_4 \cdot 2 H_2 O$	2.7689	" "
Krugite	$K_2 Ca_4 Mg (S O_4)_6 \cdot 2 H_2 O$	2.801	Precht. Ber. 14, 2138.
Simonyite	$Na_2 Mg (S O_4)_2 \cdot 4 H_2 O$	2.244	Tschermak. J. 22, 1241.
Loewite	$Na_4 Mg_2 (S O_4)_4 \cdot 5 H_2 O$	2.376	Haidinger. J. 1, 1220.
Krönnkite	$Na_2 Cu (S O_4)_2 \cdot 2 H_2 O$	2.5	Domeyko. Dana's Min., 3d Supp.
Potassium magnesium sulphate.	$K_2 Mg (S O_4)_2$	2.676	Playfair and Joule. M. C. S. 2, 401.
" " "	"	2.735	} Schröder. Ber. 7, 1117.
" " "	"	2.750	
" " "	$K_2 Mg (S O_4)_2 \cdot 6 H_2 O$	2.076, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" " "	"	2.05319, 4°	Playfair and Joule. J. C. S. 1, 138.
" " "	"	1.995	Schiff. A. C. P. 107, 64.
" " "	"	2.024	Topsoë and Christiansen.
" " "	"	2.034	Schröder. Dm. 1873.
" " "	"	2.036	} Schröder. J. P. C. (2), 19, 266.
" " "	"	2.048	
Ammonium magnesium sulphate.	$Am_2 Mg (S O_4)_2$	2.080	" "

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ammonium magnesium sulphate.	$\text{Am}_2 \text{Mg} (\text{S O}_4)_2$	2.095	Schröder. J. P. C. (2), 19, 266.
"	"	2.141	
"	$\text{Am}_2 \text{Mg} (\text{S O}_4)_2 \cdot 6 \text{H}_2 \text{O}$	1.696	Gmelin.
"	"	1.721	Playfair and Joule. M. C. S. 2, 401.
"	"	1.71686, 4°	Playfair and Joule. J. C. S. 1, 138.
"	"	1.680	Schiff. A. C. P. 107, 64.
"	"	1.762	Buignet. J. 14. 15.
"	"	1.720	Topsoë and Christiansen.
"	"	1.723	Schröder. J. P. C. (2), 19, 266.
"	"	1.727	
Potassium zinc sulphate	$\text{K}_2 \text{Zn} (\text{S O}_4)_2$	2.816	Playfair and Joule. M. C. S. 2, 401.
"	"	2.946	Various lots, differently treated. Schröder. J. P. C. (2), 19, 266.
"	"	2.891	
"	"	3.027	
"	"	2.703	
"	"	2.733	
"	$\text{K}_2 \text{Zn} (\text{S O}_4)_2 \cdot 6 \text{H}_2 \text{O}$	2.153	Kopp. A. C. P. 36, 1.
"	"	2.245	Playfair and Joule. M. C. S. 2, 401.
"	"	2.24034, 4°	Playfair and Joule. J. C. S. 1, 138.
"	"	2.153	Schiff. A. C. P. 107, 64.
"	"	2.249	Schröder. Dm. 1873.
"	"	2.235	Schröder. J. P. C. (2), 19, 266.
"	"	2.240	
Ammonium zinc sulphate	$\text{Am}_2 \text{Zn} (\text{S O}_4)_2$	2.222	Playfair and Joule. M. C. S. 2, 401.
"	"	2.258	Schröder. J. P. C. (2), 19, 266.
"	"	2.288	
"	$\text{Am}_2 \text{Zn} (\text{S O}_4)_2 \cdot 6 \text{H}_2 \text{O}$	1.897, m. of 2	Playfair and Joule. M. C. S. 2, 401.
"	"	1.910	Schiff. A. C. P. 107, 64.
"	"	1.919	Schröder. J. P. C. (2), 19, 266.
"	"	1.921	
"	"	1.925	
Potassium cadmium sulphate.	$\text{K}_2 \text{Cd} (\text{S O}_4)_2 \cdot 6 \text{H}_2 \text{O}$	2.438	Schiff. A. C. P. 107, 64.
Ammonium cadmium sulphate.	$\text{Am}_2 \text{Cd} (\text{S O}_4)_2 \cdot 6 \text{H}_2 \text{O}$	2.073	" "
Potassium manganese sulphate.	$\text{K}_2 \text{Mn} (\text{S O}_4)_2$	3.008, m. of 2	Playfair and Joule. M. C. S. 2, 401.
"	"	3.031	Schröder. Ber. 7, 1118.
"	"	2.954	Schröder. J. P. C. (2), 19, 266.
"	$\text{K}_2 \text{Mn} (\text{S O}_4)_2 \cdot 4 \text{H}_2 \text{O}$	2.313	" "
Ammonium manganese sulphate.	$\text{Am}_2 \text{Mn} (\text{S O}_4)_2 \cdot 6 \text{H}_2 \text{O}$	1.930	Thomson. Gm. H. 1, 71.
"	"	1.823	Schröder. J. P. C. (2), 19, 266.
"	"	1.827	
Potassium iron sulphate	$\text{K}_2 \text{Fe} (\text{S O}_4)_2$	3.042	" "

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Potassium iron sulphate--	$K_2 Fe (SO_4)_2 \cdot 6 H_2 O$	2.202 -----	Playfair and Joule. M. C. S. 2, 401.
“ “ “ --	“ --	2.189 -----	Schiff. A. C. P. 107, 64.
Ammonium iron sulphate	$Am_2 Fe (SO_4)_2 \cdot 6 H_2 O$	1.848, m. of 2-	Playfair and Joule. M. C. S. 2, 401.
“ “ “ --	“ --	1.813 -----	Schiff. A. C. P. 107, 64.
“ “ “ --	“ --	1.886 -----	Schröder. J. P. C. (2), 19, 266.
Potassium nickel sulphate	$K_2 Ni (SO_4)_2$ -----	2.897, m. of 2-	Playfair and Joule. M. C. S. 2, 401.
“ “ “ --	“ --	3.086 -----	Schröder. Ber. 7, 1117.
“ “ “ --	$K_2 Ni (SO_4)_2 \cdot 6 H_2 O$	2.111 -----	Kopp. A. C. P. 36, 1. Schröder. J. P. C. (2), 19, 266.
“ “ “ --	“ --	2.136 -----	
“ “ “ --	“ --	1.921 -----	
“ “ “ --	“ --	1.922 -----	
Ammonium nickel sul- phate. “ “ --	$Am_2 Ni (SO_4)_2 \cdot 6 H_2 O$	1.783 -----	Kopp. A. C. P. 36, 1.
“ “ “ --	“ --	1.915 -----	
“ “ “ --	“ --	1.921 -----	
Potassium cobalt sulphate	$K_2 Co (SO_4)_2$ -----	3.105 -----	Schröder. Ber. 7, 1118.
“ “ “ --	$K_2 Co (SO_4)_2 \cdot 6 H_2 O$	2.154 -----	Schiff. A. C. P. 107, 64.
“ “ “ --	“ --	2.205, 16°.8	Pettersson. U. N. A. 1876.
“ “ “ --	“ --	2.214, 16°.6	
Ammonium cobalt sul- phate.	$Am_2 Co (SO_4)_2 \cdot 6 H_2 O$	1.873 -----	Schiff. A. C. P. 107, 64.
“ “ “ --	“ --	1.902, 18°	Pettersson. U. N. A. 1876.
“ “ “ --	“ --	1.907, 16°.6	
“ “ “ --	“ --	1.893 -----	Schröder. J. P. C. (2), 19, 266.
Thallium cobalt sulphate--	$Tl_2 Co (SO_4)_2 \cdot 6 H_2 O$	3.729, 16°.2	Pettersson. U. N. A. 1876.
“ “ “ --	“ --	3.769, 16°	
“ “ “ --	“ --	3.803, 16°.4	
Potassium coppersulphate.	$K_2 Cu (SO_4)_2$ -----	2.797, m. of 2-	Playfair and Joule. M. C. S. 2, 401.
“ “ “ --	“ --	2.784, 20°.5	Favre and Valson. C. R. 77, 579.
“ “ “ --	“ -----	2.754	Schröder. Dm. 1873.
“ “ “ --	“ -----	2.779	
“ “ “ --	“ -----	2.789	
“ “ “ --	$K_2 Cu (SO_4)_2 \cdot 6 H_2 O$	2.244, m. of 2-	Playfair and Joule. M. C. S. 2, 401.
“ “ “ --	“ -----	2.16376, 4°	Playfair and Joule. J. C. S. 1, 138.
“ “ “ --	“ -----	2.137 -----	Schiff. A. C. P. 107, 64.
“ “ “ --	“ -----	2.186, 18°.8	Favre and Valson. C. R. 77, 579.
“ “ “ --	“ -----	2.224 -----	Schröder. Dm. 1870.
“ “ “ --	“ -----	2.221, 16°	Pettersson. U. N. A. 1876.
Ammonium copper sul- phate.	$Am_2 Cu (SO_4)_2$ -----	2.197, m. of 2-	Playfair and Joule. M. C. S. 2, 401.
“ “ “ --	“ -----	2.348 -----	Schröder. J. P. C. (2), 19, 266.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ammonium copper sulphate.	$\text{Am}_2\text{Cu}(\text{SO}_4)_2 \cdot 6\text{H}_2\text{O}$	1.756 -----	Kopp. A. C. P. 36, 1.
“ “ “	“	1.757 -----	
“ “ “	“	1.891, m. of 2	Playfair and Joule. M. C. S. 2, 401.
“ “ “	“	1.89378, 4°	Playfair and Joule. J. C. S. 1, 138.
“ “ “	“	1.931 -----	Schiff. A. C. P. 107, 64.
“ “ “	“	1.925, 15°.2	Pettersson. U. N. A. 1876.
“ “ “	“	1.931, 15°.8	
“ “ “	“	1.870, 22°	Evans. F. W. C.
Magnesium zinc sulphate.	$\text{MgZn}(\text{SO}_4)_2 \cdot 14\text{H}_2\text{O}$	1.817 -----	Schiff. A. C. P. 107, 64.
Magnesium cadmium sulphate.	$\text{MgCd}(\text{SO}_4)_2 \cdot 14\text{H}_2\text{O}$	1.983 -----	“ “
Magnesium iron sulphate.	$\text{MgFe}(\text{SO}_4)_2 \cdot 14\text{H}_2\text{O}$	1.733 -----	“ “
Magnesium copper sulphate.	$\text{MgCu}(\text{SO}_4)_2 \cdot 14\text{H}_2\text{O}$	1.813 -----	“ “
Fauserite -----	$\text{MgMn}_2(\text{SO}_4)_3 \cdot 15\text{H}_2\text{O}$	1.88 -----	Breithaupt. J. 18, 901.
Zinc iron manganese sulphate. Native.	$\text{Zn Fe Mn}_5 (\text{S O}_4)_7 \cdot 28 \text{ H}_2 \text{ O}.$	2.1627 -----	Iles. A. C. J. 3, 420.
Mendozite -----	$\text{Na Al}(\text{SO}_4)_2 \cdot 11 \text{ H}_2 \text{ O}$	1.88 -----	Thomson. Dana's Min.
Sodium aluminum alum.	$\text{Na Al}(\text{SO}_4)_2 \cdot 12 \text{ H}_2 \text{ O}$	1.641 -----	Schiff. A. C. P. 107, 64.
“ “ “	“	1.567 -----	Buignet. J. 14, 15.
“ “ “	“	1.686, 18°	Pettersson. U. N. A. 1874.
“ “ “	“	1.693, 18°	
“ “ “	“	1.694, 18°.2	Soret. J. C. S. 50, 596.
“ “ “	“	1.73 -----	
Potassium aluminum alum.*	$\text{K Al}(\text{SO}_4)_2$	2.228, m. of 2	Playfair and Joule. M. C. S. 2, 401.
“ “ “	“	2.6846	Pettersson. U. N. A. 1876.
“ “ “	“	2.6905	
“ “ “	$\text{K Al}(\text{SO}_4)_2 \cdot 12 \text{ H}_2 \text{ O}$	1.7109 -----	Hassenfratz. Ann. 28, 3.
“ “ “	“	1.753 -----	Dufrenoy.
“ “ “	“	1.724 -----	Kopp. A. C. P. 36, 1.
“ “ “	“	1.726, m. of 4	Playfair and Joule. M. C. S. 2, 401.
“ “ “	“	1.75125, 4°	Playfair and Joule. J. C. S. 1, 138.
“ “ “	“	1.711 -----	Schröder. Dm. 1873.
“ “ “	“	1.749, 21°	Pettersson. U. N. A. 1874.
“ “ “	“	1.753, 21°	
“ “ “	“	1.755, 20°.5	W. C. Smith. Am. J. P. 53, 145.
“ “ “	“	1.753 -----	
“ “ “	“	1.722 -----	Schiff. A. C. P. 107, 64.
“ “ “	“	1.757 -----	Buignet. J. 14, 15.
“ “ “	“	1.7505 -----	Stolba. J. P. C. 97, 503.

* The dehydrated alums are included here for convenience.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Potassium aluminum alum	$K Al(SO_4)_2 \cdot 12H_2O$	1.7546, 0°	Spring. Ber. 15, 1254, and Bei. 6, 648. Also a series in Ber. 17, 408.
"	"	1.7542, 10°	
"	"	1.7538, 20°	
"	"	1.7532, 30°	
"	"	1.7526, 40°	
"	"	1.7521, 50°	
"	"	1.7501, 60°	
"	"	1.7474, 70°	
"	"	1.7252, 80°	
"	"	1.7067, 90°	
"	"	1.758, 21°, not pressed.	Spring. Ber. 16, 2724.
"	"	1.756, 16°.5, once pressed.	
"	"	1.750, 16°.5, twice pressed	
"	"	1.735	Soret. C. R. 99, 867.
Rubidium aluminum alum	$Rb Al(SO_4)_2$	2.7832, 14°.8	Pettersson. U. N. A. 1876.
"	"	2.7910, 15°	Redtenbacher. S. W. A. 51, 248.
"	$Rb Al(SO_4)_2 \cdot 12H_2O$	1.874	
"	"	1.890 } 20°	Pettersson. U. N. A. 1874.
"	"	1.891 }	
"	"	1.8667, 0°	
"	"	1.8648, 10°	
"	"	1.8639, 20°	
"	"	1.8635, 30°	
"	"	1.8631, 40°	
"	"	1.8624, 50°	
"	"	1.8619, 60°	
"	"	1.8611, 70°	
"	"	1.8596, 80°	Spring. Ber. 15, 1254, and Bei. 6, 648. Also a series in Ber. 17, 408.
"	"	1.8578, 90°	
"	"	1.8554, 100°	
"	"	1.883 } 20°.6	Setterberg. Ber. 15, 1740.
"	"	1.886 }	
"	"	1.852	Soret. C. R. 99, 867.
Cæsium aluminum alum	$Cs Al(SO_4)_2 \cdot 12H_2O$	2.003	Redtenbacher. S. W. A. 51, 248.
"	"	1.994, 18°.1	Pettersson. U. N. A. 1874.
"	"	2.000, 20°	
"	"	2.0215, 0°	
"	"	2.0210, 10°	Spring. Ber. 15, 1254, and Bei. 6, 648. Also a series in Ber. 17, 408.
"	"	2.0205, 20°	
"	"	2.0200, 30°	
"	"	3.0194, 40°	
"	"	2.0189, 50°	
"	"	2.0186, 60°	
"	"	2.0173, 70°	
"	"	2.0153, 80°	
"	"	2.0107, 90°	
"	"	2.0061, 100°	
"	"	1.988, 18°, not pressed.	Spring. Ber. 16, 2724.
"	"	2.000, 20°, once pressed.	
"	"	2.005, 20°, twice pressed	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Cæsium aluminum alum.	$\text{Cs Al}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$	1.911 -----	Soret. C. R. 99, 867.
Ammonium aluminum alum.	$\text{Am Al}(\text{SO}_4)_2$	2.039 -----	Playfair and Joule. M. C. S. 2. 401.
" "	$\text{Am Al}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$	1.602 -----	Breithaupt. J. P. C. 11, 151.
" "	"	1.625 } -----	Kopp. A. C. P. 36, 1.
" "	"	1.626 } -----	
" "	"	1.625 -----	
" "	"	1.621 -----	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.621 -----	Schiff. A. C. P. 107, 64.
" "	"	1.653 -----	Buignet. J. 14, 15.
" "	"	1.642, m. of 4	} Pettersson. U. N. A. 1874.
" "	"	1.638 } extremes	
" "	"	1.647 } 18°.2-19°.5	
" "	"	1.661 -----	
" "	"	1.6357, 0°	} Spring. Ber. 15, 1254, and Bei. 6, 648. Also a series in Ber. 17, 408.
" "	"	1.6351, 10°	
" "	"	1.6346, 20°	
" "	"	1.6345, 30°	
" "	"	1.6340, 40°	
" "	"	1.6336, 50°	
" "	"	1.6332, 60°	
" "	"	1.6328, 70°	
" "	"	1.6323, 80°	
" "	"	1.6299, 90°	
" "	"	1.6275, 100°	} Spring. Ber. 16, 2724.
" "	"	1.641, 18°, not pressed.	
" "	"	1.629, 16°.5, once pressed.	
" "	"	1.634, 18°, twice pressed	} Soret. C. R. 99, 867.
" "	"	1.631 -----	
Methylamine aluminum alum.	$(\text{NH}_2\text{CH}_3)\text{Al}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$	1.568 -----	" "
Thallium aluminum alum	$\text{Tl Al}(\text{SO}_4)_2 \cdot 2\text{H}_2\text{O}$	3.645, 17° -----	Pettersson. U. N. A. 1874.
" "	$\text{Tl Al}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$	2.348, 15°.8	} " "
" "	"	2.366, 21°	
" "	"	2.368, 20°.6	
" "	"	2.384, 17°	
" "	"	2.320, 22°, not pressed.	} Spring. Ber. 16, 2724.
" "	"	2.314, 16°.5, once pressed.	
" "	"	2.314, 18°, twice pressed	
" "	"	2.3226, 0°	} Spring. Ber. 17, 408.
" "	"	2.3213, 10°	
" "	"	2.3200, 20°	
" "	"	2.3189, 30°	
" "	"	2.3184, 40°	
" "	"	2.3181, 50°	
" "	"	2.257 -----	Soret. C. R. 99, 867.
Potassium chrome alum	$\text{K Cr}(\text{SO}_4)_2$	2.1583, 14°.1	} Pettersson. U. N. A. 1876.
" "	"	2.1618, 14°.4	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Potassium chrome alum	$K Cr (SO_4)_2 \cdot 12 H_2 O$	1.848 -----	Kopp. A. C. P. 36, 1.
" " "	"	1.826 -----	Playfair and Joule. M. C. S. 2, 401.
" " "	"	1.85609, 4°	Playfair and Joule. J. C. S. 1, 138.
" " "	"	1.845, 12°	Schiff. A. C. P. 107, 64.
" " "	"	1.839, 21°	Pettersson. U. N. A. 1874.
" " "	"	1.840, 21°	
" " "	"	1.841, 20°.2	
" " "	"	1.849, 21°	
" " "	"	1.807	Schröder. Dm. 1873.
" " "	"	1.808	
" " "	"	1.8278, 0°	
" " "	"	1.8273, 10°	
" " "	"	1.8269, 20°	Spring. Ber. 15, 1254, and Bei. 6, 648. Also a series in Ber. 17, 408.
" " "	"	1.8265, 30°	
" " "	"	1.8260, 40°	
" " "	"	1.8255, 50°	
" " "	"	1.8223, 60°	Spring. Ber. 16, 2724.
" " "	"	1.8044, 70°	
" " "	"	1.7456, 80°	
" " "	"	1.828, 20°, not pressed.	
" " "	"	1.823, 16°.5, once pressed.	Soret. C. R. 99, 867.
" " "	"	1.817	Pettersson. U. N. A. 1874.
Rubidium chrome alum	$Rb Cr (SO_4)_2 \cdot 12 H_2 O$	1.967	Soret. C. R. 99, 867.
" " "	"	1.969	
" " "	"	1.946	Pettersson. U. N. A. 1874.
Cæsium chromium alum	$Cs Cr (SO_4)_2 \cdot 12 H_2 O$	2.043	Soret. C. R. 99, 867.
Ammonium chrome alum	$Am Cr (SO_4)_2$	1.9943, 14°.7	" "
" " "	$Am Cr (SO_4)_2 \cdot 12 H_2 O$	1.738, 21°	Pettersson. U. N. A. 1876.
" " "	"	1.728, 20°	Schrötter. P. A. 53, 513.
" " "	"	1.719	Pettersson. U. N. A. 1874.
Thallium chrome alum	$Tl Cr (SO_4)_2 \cdot 12 H_2 O$	2.392, 15°	Soret. C. R. 99, 867.
" " "	"	2.402, 18°	
" " "	"	2.236	Pettersson. U. N. A. 1874.
Potassium iron alum	$K Fe (SO_4)_2 \cdot 12 H_2 O$	1.831	Soret. C. R. 99, 867.
" " "	"	1.819, 16°.8	Topsoë. C. C. 4, 76.
" " "	"	1.822, 17°.5	
" " "	"	1.831, 17°	
" " "	"	1.806	Pettersson. U. N. A. 1874.
Rubidium iron alum	$Rb Fe (SO_4)_2 \cdot 12 H_2 O$	1.916	Soret. C. R. 99, 867.
Cæsium iron alum	$Cs Fe (SO_4)_2 \cdot 12 H_2 O$	2.061	" "
Ammonium iron alum	$Am Fe (SO_4)_2$	2.54, 16°.8	" "
" " "	$Am Fe (SO_4)_2 \cdot 12 H_2 O$	1.712	Pettersson. U. N. A. 1874.
" " "	"	1.718	Kopp. A. C. P. 36, 1.
" " "	"	1.719	Playfair and Joule. M. C. S. 2, 401.
" " "	"	1.700	Topsoë. C. C. 4, 76.
" " "	"	1.700	Schröder. Dm. 1873.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ammonium iron alum ---	$\text{AmFe}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$	1.720, 18°.2	Pettersson. U.N.A. 1874. Soret. C. R. 99, 867. Pettersson. U.N.A. 1874.
“ “ “ ---	“	1.723, 18°	
“ “ “ ---	“	1.725, 17°	
“ “ “ ---	“	1.713	
Thallium iron alum -----	$\text{TlFe}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$	2.351, 15	Pettersson. U.N.A. 1874.
“ “ “ -----	“	2.385	Soret. C. R. 99, 867.
Potassium gallium alum ---	$\text{K Ga}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$	1.895	Soret. C. R. 101, 156.
Rubidium gallium alum ---	$\text{Rb Ga}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$	1.962	“ “
Ammonium gallium alum ---	$\text{Am Ga}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$	1.745	Soret. C. R. 99, 867.
“ “ “ ---	“	1.776	Soret. C. R. 101, 156.
Rubidium indium alum ---	$\text{Rb In}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$	2.065	“ “
Cæsium indium alum ---	$\text{Cs In}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$	2.241	“ “
Ammonium indium alum ---	$\text{Am In}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$	2.011	Soret. C. R. 99, 867.
Sonomaite -----	$\text{Mg}_3\text{Al}_2(\text{SO}_4)_6 \cdot 33\text{H}_2\text{O}$	1.604	Goldsmith. J. 30, 1297.
Roemerite. (Ferroso-fer- ric sulphate.)	$\text{Fe}_3(\text{SO}_4)_4 \cdot 12\text{H}_2\text{O}$	2.15—2.18	Grailich. J. 11, 730.
Uranyl potassium sulphate	$\text{UO}_2\text{K}_2(\text{SO}_4)_2 \cdot 2\text{H}_2\text{O}$	3.363, 19°.1	Schmidt. F. W. C.
Uranyl ammonium sul- phate.	$\text{UO}_2\text{Am}_2(\text{SO}_4)_2 \cdot 2\text{H}_2\text{O}$	3.0131, 21°.5	“ “
Didymium ammonium sulphate. “ ---	$\text{Am Di}(\text{SO}_4)_2$	3.075 } 15°	Cleve. U.N.A. 1885.
“ “ “ ---	“	3.086 } 15°	
“ “ “ ---	$\text{Am Di}(\text{SO}_4)_2 \cdot 4\text{H}_2\text{O}$	2.575, 15°	
“ “ “ ---	$\text{Am Di}(\text{SO}_4)_2 \cdot 4\text{H}_2\text{O}$	3.191, 18°	
Samarium ammonium sul- phate. “ “	$\text{Am Sm}(\text{SO}_4)_2 \cdot 4\text{H}_2\text{O}$	2.674 } 18°.4	“ “
“ “ “	“	2.677 } 18°.4	

3d. Basic and Ammonio-Sulphates,

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Tetrabasic zinc sulphate ---	$\text{Zn}_4\text{SO}_7 \cdot 4\text{H}_2\text{O}$	3.122	Playfair and Joule. M. C. S. 2, 401.
Mercuric orthosulphate, or turpeth mineral.	Hg_3SO_6	8.319	“ “
Tetrabasic copper sulphate	$\text{Cu}_4\text{SO}_7 \cdot 4\text{H}_2\text{O}$	3.082, m. of 2	Maskelyne. J. 18, 901.
“ “ “ } Langite. }	“	3.48	
“ “ “ } Langite. }	“	3.50	
Herrengrundite -----	$\text{Cu}_5\text{S}_2\text{O}_{11} \cdot 7\text{H}_2\text{O}$	3.132	Winkler. Dana's Min., 3d App.
Brochantite* -----	$\text{Cu}_7\text{S}_2\text{O}_{13} \cdot 5\text{H}_2\text{O}$	3.78—3.87	Magnus. P. A. 14, 141.
“ -----	“	3.9069	G. Rose. Dana's Min.
“ Warringtonite ---	“	3.39—3.47	Maskelyne. J. 18, 902.

* Composition uncertain, because of variations in the analyses.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Lanarkite -----	$\text{Pb}_2 \text{S O}_5$ -----	6.3—6.4 -----	Thomson.
Linarite -----	$\text{Pb Cu S O}_5 \cdot \text{H}_2 \text{O}$ -----	5.43 -----	Brooke. Ann. Phil. (2), 4, 117.
Alumian -----	$\text{Al}_2 \text{S}_2 \text{O}_7$ -----	2.702 -----	Breithaupt. J. 11, 730.
" -----	" -----	2.781 -----	
Werthemanite -----	$\text{Al}_2 \text{S O}_6 \cdot 3 \text{H}_2 \text{O}$ -----	2.80 -----	Raimondi. Dana's Min., 3d App.
Aluminite -----	$\text{Al}_2 \text{S O}_6 \cdot 9 \text{H}_2 \text{O}$ -----	1.66 -----	Dana's Mineralogy.
Felsobanyite -----	$\text{Al}_4 \text{S O}_9 \cdot 10 \text{H}_2 \text{O}$ -----	2.33 -----	Haidinger. J. 7, 863.
Alunite -----	$\text{K}_2 \text{Al}_6 \text{S}_4 \text{O}_{22} \cdot 6 \text{H}_2 \text{O}$ -----	2.481 -----	Gautier-Lacroze. J. 16, 833.
Löwigite -----	$\text{K}_2 \text{Al}_6 \text{S}_4 \text{O}_{22} \cdot 9 \text{H}_2 \text{O}$ -----	2.58 -----	Römer. J. 9, 877.
Zincaluminite -----	$\text{Zn}_6 \text{Al}_6 \text{S}_2 \text{O}_{21} \cdot 18 \text{H}_2 \text{O}$ -----	2.26 -----	Bertrand and Da- mour. Z. K. M. 6, 298.
Ettringite -----	$\text{Ca}_6 \text{Al}_2 \text{S}_3 \text{O}_{18} \cdot 32 \text{H}_2 \text{O}$ -----	1.7504 -----	Lehmann. N. J. 1874, 273.
Amarantite -----	$\text{Fe}_2 \text{S}_2 \text{O}_9 \cdot 7 \text{H}_2 \text{O}$ -----	2.11 -----	Frenzel. M. P. M. 9, 398.
Raimondite -----	$\text{Fe}_4 \text{S}_3 \text{O}_{15} \cdot 7 \text{H}_2 \text{O}$ -----	3.190 -----	Breithaupt. J. 19, 952.
" -----	" -----	3.222 -----	
Hohmannite -----	$\text{Fe}_4 \text{S}_3 \text{O}_{15} \cdot 13 \text{H}_2 \text{O}$ -----	2.24 -----	Frenzel. M. P. M. 9, 397.
Copiapite -----	$\text{Fe}_4 \text{S}_5 \text{O}_{21} \cdot 12 \text{H}_2 \text{O}$ -----	2.14 -----	Borcher. Dana's Min.
Fibroferrite -----	$\text{Fe}_4 \text{S}_5 \text{O}_{21} \cdot 27 \text{H}_2 \text{O}$ -----	1.84 -----	Smith. A. J. S. (2), 18, 375.
Carphosiderite -----	$\text{Fe}_6 \text{S}_4 \text{O}_{21} \cdot 10 \text{H}_2 \text{O}$ -----	2.728 -----	Pisani. Dana's Min.
" -----	" -----	2.496—2.501 -----	Breithaupt. Schw. J. 50, 314.
" -----	" -----	3.09 -----	Lacroix. C. R. 103, 1037.
Jarosite -----	$\text{K}_2 \text{Fe}_8 \text{S}_5 \text{O}_{28} \cdot 9 \text{H}_2 \text{O}$ -----	3.256 -----	Breithaupt. J. 6, 845.
Urusite -----	$\text{Na}_4 \text{Fe}_2 \text{S}_4 \text{O}_{17} \cdot 8 \text{H}_2 \text{O}$ -----	2.22 -----	Frenzel J. 32, 1195.
Sideronatrite -----	$\text{Na}_2 \text{Fe}_2 \text{S}_3 \text{O}_{13} \cdot 6 \text{H}_2 \text{O}$ -----	2.153 -----	Dana's Min., 3d App.
Silver ammonio-sulphate -----	$\text{Ag}_2 \text{S O}_4 \cdot 4 \text{N H}_3$ -----	2.918, m. of 2 -----	Playfair and Joule. M. C. S. 2, 401.
Zincammonium sulphate -----	$\text{Zn N}_2 \text{H}_6 \cdot \text{S O}_4$ -----	2.479 -----	" "
Tetramercurammonium sulphate. -----	$\text{Hg}_4 \text{N}_2 \text{S O}_4 \cdot 2 \text{H}_2 \text{O}$ -----	7.319 -----	" "
Cuprammonium sulphate -----	$\text{Cu N}_2 \text{H}_6 \cdot \text{S O}_4$ -----	2.476 -----	" "
" " -----	$\text{Cu N}_2 \text{H}_6 \cdot \text{S O}_4 \cdot 3 \text{H}_2 \text{O}$ -----	1.950 -----	" "
Copper ammonio-sulphate -----	$\text{Cu S O}_4 \cdot 4 \text{N H}_3 \cdot \text{H}_2 \text{O}$ -----	1.790 -----	" "
" " -----	" -----	1.809 -----	
" " -----	" -----	2.133, 24°.3 -----	Evans. F. W. C.
Roseocobalt iodosulphate -----	$\text{Co}_2 (\text{N H}_3)_{10} (\text{S O}_4)_2 \text{I}_2$ -----	2.139 -----	Wilson. F. W. C.
" " -----	" -----	2.149 -----	

NOTE.—Botryogen, clinophæite, johannite, lamprophanite, pissophanite, plagiocitrite, and watevillite, being of uncertain composition, are omitted. See Dana's Mineralogy and appendixes.

XXIII. SELENITES AND SELENATES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Hydrogen selenite, or selenious acid.	$\text{H}_2 \text{Se O}_3$ -----	3.123 -----	Topsoë. C. C. 4, 76.
“ “ “	“ -----	3.0066 -----	Clausnizer. A. C. P. 196, 265.
Chalcomenite -----	$\text{Cu Se O}_3 \cdot 2 \text{H}_2 \text{O}$ -----	3.76 -----	Des Cloizeaux and Damour. B. S. M. 4, 51.
Mercurous selenite -----	$3 \text{Hg}_2 \text{O} \cdot 4 \text{Se O}_2$ -----	7.35, 13°.5 -----	Köhler. P. A. 89, 149.
Hydrogen selenate, or selenic acid. “ “	$\text{H}_2 \text{Se O}_4$ -----	2.524 -----	} Mitscherlich. P. A. 9, 629.
“ “ “	“ -----	2.625 -----	
“ “ “	“ -----	2.627 -----	
Lithium selenate -----	$\text{Li}_2 \text{Se O}_4 \cdot \text{H}_2 \text{O}$ -----	2.439 -----	Fabian. J. 14, 130.
“ “	“ -----	2.564, 18°	} Topsoë. C. C. 4, 76.
“ “	“ -----	2.565, 19°.5	
Sodium selenate -----	$\text{Na}_2 \text{Se O}_4$ -----	3.098 -----	Pettersson. U. N. A. 1874.
“ “	“ -----	3.209, 17°.2	} Topsoë. B. S. C. 19, 246.
“ “	“ -----	3.217, 17°.6	
“ “	$\text{Ne}_2 \text{Se O}_4 \cdot 10 \text{H}_2 \text{O}$ -----	1.584 -----	} Pettersson. U. N. A. 1874.
“ “	“ -----	1.612, m. of 5	
“ “	“ -----	1.603 } extremes	
“ “	“ -----	1.621 } 17°.9-19°	
Potassium selenate -----	$\text{K}_2 \text{Se O}_4$ -----	3.050 -----	} Topsoë. C. C. 4, 76.
“ “	“ -----	3.074, 18°	
“ “	“ -----	3.077, 19°	
“ “	“ -----	3.077, 21°	
Sodium potassium selenate	$\text{Na}_2 \text{Se O}_4 \cdot 3 \text{K}_2 \text{Se O}_4$ -----	3.095 -----	} Pettersson. U. N. A. 1874.
Rubidium selenate -----	$\text{Rb}_2 \text{Se O}_4$ -----	3.923, m. of 5	
“ “	“ -----	3.896 } extremes	
“ “	“ -----	3.943 } 18°-19°.8	} Topsoë. C. C. 4, 76.
Cæsium selenate -----	$\text{Cs}_2 \text{Se O}_4$ -----	4.31, 15°.2	
“ “	“ -----	4.34, 15°.5	} Pettersson. U. N. A. 1876.
Ammonium selenate -----	$\text{Am}_2 \text{Se O}_4$ -----	2.162 -----	
“ “	“ -----	2.197, 18°	} Topsoë. B. S. C. 19, 246.
“ “	“ -----	2.198, 18°.8	
Ammonium hydrogen selenate.	Am H Se O_4 -----	2.409 -----	Pettersson. U. N. A. 1874.
Silver selenate -----	$\text{Ag}_2 \text{Se O}_4$ -----	5.92, 17°.2	} Topsoë. C. C. 4, 76.
“ “	“ -----	5.93, 17°	
Silver ammonio-selenate -----	$\text{Ag}_2 \text{Se O}_4 \cdot 4 \text{N H}_3$ -----	2.854 -----	} Pettersson. U. N. A. 1874.
Thallium selenate -----	$\text{Tl}_2 \text{Se O}_4$ -----	7.019, 18°	
“ “	“ -----	7.067, 18°.2	} Topsoë. C. C. 4, 76.
Glucinum selenate -----	$\text{Gl Se O}_4 \cdot 4 \text{H}_2 \text{O}$ -----	2.029 -----	
Magnesium selenate -----	$\text{Mg Se O}_4 \cdot 6 \text{H}_2 \text{O}$ -----	1.928 -----	} Pettersson. U. N. A. 1876.
“ “	“ -----	1.955, 15°.2	
“ “	“ -----	1.960, 15°.8	} Topsoë. C. C. 4, 76.
Zinc selenate -----	$\text{Zn Se O}_4 \cdot 5 \text{H}_2 \text{O}$ -----	2.591 -----	
“ “	$\text{Zn Se O}_4 \cdot 6 \text{H}_2 \text{O}$ -----	2.325 -----	} “ “
Cadmium selenate -----	$\text{Cd Se O}_4 \cdot 2 \text{H}_2 \text{O}$ -----	3.632 -----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Calcium selenate. Cryst.	Ca Se O_4	2.93	Michel. C. R. 106, 878.
" " -----	$\text{Ca Se O}_4 \cdot 2 \text{ H}_2 \text{ O}$	2.676	Topsoë. C. C. 4, 76.
Strontium selenate. Cryst.	Sr Se O_4	4.23	Michel. C. R. 106, 878.
Barium selenate -----	Ba Se O_4	4.67, 22°	Schafarik. J. P. C. 90, 12.
" " Cryst. -----	"	4.75	Michel. C. R. 106, 878.
Lead selenate -----	Pb Se O_4	6.37, 22°	Schafarik. J. P. C. 90, 12.
" " -----	"	6.22, 18°	Pettersson. U. N. A. 1874.
" " -----	"	6.23, 18°.2	
Manganese selenate -----	$\text{Mn Se O}_4 \cdot 2 \text{ H}_2 \text{ O}$	2.949	Topsoë. B. S. C. 19, 246.
" " -----	"	3.001, 15°.8	Pettersson. U. N. A. 1876.
" " -----	"	3.012, 16°.6	
" " -----	$\text{Mn Se O}_4 \cdot 5 \text{ H}_2 \text{ O}$	2.334	Topsoë. B. S. C. 19, 246.
" " -----	"	2.386	Pettersson. U. N. A. 1876.
" " -----	"	2.389	
Iron selenate -----	$\text{Fe Se O}_4 \cdot 7 \text{ H}_2 \text{ O}$	2.073	Topsoë. B. S. C. 19, 246.
Nickel selenate -----	$\text{Ni Se O}_4 \cdot 6 \text{ H}_2 \text{ O}$	2.314	" "
" " -----	"	2.332, 14°.1	Pettersson. U. N. A. 1876.
" " -----	"	2.335, 13°.8	
" " -----	"	2.339, 13°.8	
Cobalt selenate -----	Co Se O_4	4.037, 14°.2	" "
" " -----	$\text{Co Se O}_4 \cdot 5 \text{ H}_2 \text{ O}$	2.512	Topsoë. C. C. 4, 76.
" " -----	$\text{Co Se O}_4 \cdot 6 \text{ H}_2 \text{ O}$	2.179	" "
" " -----	"	2.247, 14°.6	Pettersson. U. N. A. 1876.
" " -----	"	2.248, 17°	
" " -----	"	2.258, 15°.8	
" " -----	$\text{Co Se O}_4 \cdot 7 \text{ H}_2 \text{ O}$	2.135	Topsoë. C. C. 4, 76.
Copper selenate -----	$\text{Cu Se O}_4 \cdot 5 \text{ H}_2 \text{ O}$	2.559	" "
" " -----	"	2.561, 19°.2	Pettersson. U. N. A. 1874.
" " -----	"	2.562, 17°.8	
Yttrium selenate -----	$\text{Y}_2 (\text{Se O}_4)_3 \cdot 9 \text{ H}_2 \text{ O}$	2.6770, 18°	Cleve and Hoeglund. B. S. C. 18, 289.
" " -----	"	2.780	Topsoë. Quoted by Pettersson.
" " -----	"	2.661, 12°.8	Pettersson. U. N. A. 1876.
Erbium selenate -----	$\text{Er}_2 (\text{Se O}_4)_3 \cdot 8 \text{ H}_2 \text{ O}$	3.516	Topsoë. Quoted by Pettersson.
" " -----	"	3.501, 13°.8	Pettersson. U. N. A. 1876.
" " -----	"	3.510, 14°	
" " -----	"	3.529, 13°.4	
" " -----	$\text{Er}_2 (\text{Se O}_4)_3 \cdot 9 \text{ H}_2 \text{ O}$	3.171	Topsoë. Quoted by Pettersson.
Lanthanum selenate -----	$\text{La}_2 (\text{Se O}_4)_3 \cdot 6 \text{ H}_2 \text{ O}$	3.48, 14°.4	Pettersson. U. N. A. 1876.
Didymium selenate -----	$\text{Di}_2 (\text{Se O}_4)_3$	4.416	Cleve. U. N. A. 1885.
" " -----	"	4.430	
" " -----	"	4.460	
" " -----	"	4.461	
" " -----	$\text{Di}_2 (\text{Se O}_4)_3 \cdot 5 \text{ H}_2 \text{ O}$	3.710, 13°.8	Pettersson. U. N. A. 1876.
" " -----	"	3.722, 13°.3	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Didymium selenate-----	$\text{Di}_2 (\text{Se O}_4)_3 \cdot 5 \text{ H}_2 \text{ O}$	3.677, 15°	Cleve. U. N. A. 1885.
“ “-----	“-----	3.685, 18° 3	
Samarium selenate-----	$\text{Sm}_2 (\text{Se O}_4)_3$ -----	4.077, 10°-----	
“ “-----	$\text{Sm}_2 (\text{Se O}_4)_3 \cdot 8 \text{ H}_2 \text{ O}$	3.326 } 13°-----	“ “
“ “-----	“-----	3.329 }	
“ “-----	$\text{Sm}_2 (\text{Se O}_4)_3 \cdot 12 \text{ H}_2 \text{ O}$	3.009 } 10°-----	“ “
“ “-----	“-----	3.010 }	
Thorium selenate-----	$\text{Th} (\text{Se O}_4)_2 \cdot 9 \text{ H}_2 \text{ O}$	3.026-----	Topsoë. B. S. C. 21, 121.
Magnesium potassium se- lenate.	$\text{Mg K}_2 (\text{SeO}_4)_2 \cdot 6 \text{ H}_2 \text{ O}$	2.336-----	Topsoë. C. C. 4, 76.
Magnesium ammonium selenate.	$\text{Mg Am}_2 (\text{SeO}_4)_2 \cdot 6 \text{ H}_2 \text{ O}$	2.035-----	Topsoë. B. S. C. 19, 246.
Zinc potassium selenate--	$\text{Zn K}_2 (\text{Se O}_4)_2 \cdot 2 \text{ H}_2 \text{ O}$	3.210-----	Topsoë. C. C. 4, 76.
“ “ “--	$\text{Zn K}_2 (\text{Se O}_4)_2 \cdot 6 \text{ H}_2 \text{ O}$	2.538-----	“ “
Zinc ammonium selenate--	$\text{Zn Am}_2 (\text{SeO}_4)_2 \cdot 6 \text{ H}_2 \text{ O}$	2.200-----	“ “
Cadmium potassium sele- nate.	$\text{Cd K}_2 (\text{Se O}_4)_2 \cdot 2 \text{ H}_2 \text{ O}$	3.376-----	“ “
Cadmium ammonium se- lenate.	$\text{Cd Am}_2 (\text{SeO}_4)_2 \cdot 2 \text{ H}_2 \text{ O}$	2.897-----	“ “
“ “ “	$\text{Cd Am}_2 (\text{SeO}_4)_2 \cdot 6 \text{ H}_2 \text{ O}$	2.307-----	“ “
Manganese potassium se- lenate.	$\text{Mn K}_2 (\text{SeO}_4)_2 \cdot 2 \text{ H}_2 \text{ O}$	3.070-----	Topsoë. B. S. C. 19, 246.
Manganese ammonium se- lenate.	$\text{Mn Am}_2 (\text{SeO}_4)_2 \cdot 6 \text{ H}_2 \text{ O}$	2.093-----	Topsoë. C. C. 4, 76.
Iron ammonium selenate--	$\text{Fe Am}_2 (\text{SeO}_4)_2 \cdot 6 \text{ H}_2 \text{ O}$	2.160-----	“ “
Nickel potassium selenate	$\text{Ni K}_2 (\text{Se O}_4)_2 \cdot 6 \text{ H}_2 \text{ O}$	2.539-----	“ “
“ “ “--	“--	2.580, m. of 5--	} Pettersson. U. N. A. 1876.
“ “ “--	“--	2.573 } extremes	
“ “ “--	“--	2.587 } 16° 4-17° 3	
Nickel ammonium sele- nate.	$\text{Ni Am}_2 (\text{SeO}_4)_2 \cdot 6 \text{ H}_2 \text{ O}$	2.228-----	Topsoë. C. C. 4, 76.
“ “ “--	“--	2.274, 15° 8 }	} Pettersson. U. N. A. 1876.
“ “ “--	“--	2.279, 16° }	
Nickel thallium selenate--	$\text{Ni Tl}_2 (\text{Se O}_4)_2 \cdot 6 \text{ H}_2 \text{ O}$	4.066, 13° 3-----	“ “
Cobalt potassium selenate	$\text{Co K}_2 (\text{Se O}_4)_2 \cdot 6 \text{ H}_2 \text{ O}$	2.514-----	Topsoë. C. C. 4, 76.
“ “ “--	“--	2.531, 18° 8 }	} Pettersson. U. N. A. 1876.
“ “ “--	“--	2.543, 17° 4 }	
Cobalt rubidium selenate--	$\text{Co Rb}_2 (\text{Se O}_4)_2 \cdot 6 \text{ H}_2 \text{ O}$	2.837, 18° 3 }	} “ “
“ “ “--	“--	2.838, 15° 6 }	
“ “ “--	“--	2.844, 18° 6 }	} “ “
Cobalt cæsium selenate---	$\text{Co Cs}_2 (\text{Se O}_4)_2 \cdot 6 \text{ H}_2 \text{ O}$	3.050, 18° 5 }	
“ “ “--	“--	3.061, 16° 7 }	
“ “ “--	“--	3.073, 18° 8 }	} Topsoë. C. C. 4, 76.
Cobalt ammonium selenate	$\text{Co Am}_2 (\text{Se O}_4)_2 \cdot 6 \text{ H}_2 \text{ O}$	2.212-----	
“ “ “--	“--	2.225, 18° 8 }	} Pettersson. U. N. A. 1876.
“ “ “--	“--	2.229, 17° }	
“ “ “--	“--	2.248, 15° 8 }	
Cobalt thallium selenate--	$\text{Co Tl}_2 (\text{Se O}_4)_2 \cdot 6 \text{ H}_2 \text{ O}$	4.047, 13° 5 }	} “ “
“ “ “--	“--	4.059, 16° 5 }	
Copper potassium selenate	$\text{Cu K}_2 (\text{Se O}_4)_2 \cdot 6 \text{ H}_2 \text{ O}$	2.527-----	Topsoë. C. C. 4, 76.
“ “ “--	“--	2.556, 17° }	} Pettersson. U. N. A. 1876.
“ “ “--	“--	2.557, 16° 4 }	
Copperammoniumselenate	$\text{Cu Am}_2 (\text{SeO}_4)_2 \cdot 6 \text{ H}_2 \text{ O}$	2.221-----	Topsoë. C. C. 4, 76.
“ “ “--	“--	2.234, 17° 2-----	Pettersson. U. N. A. 1876.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium aluminum alum--	$\text{NaAl}(\text{SeO}_4)_2 \cdot 12\text{H}_2\text{O}$	2.061, 21°	Pettersson. U. N. A. 1874.
" " " --	" --	2.069, 20°.8	
" " " --	" --	2.071, 20°.8	
Potassium aluminum alum	$\text{KAl}(\text{SeO}_4)_2 \cdot 12\text{H}_2\text{O}$	1.971	Weber. J. 12, 91.
" " " --	" --	1.998, 21°	Pettersson. U. N. A. 1874.
" " " --	" --	2.004, 20°.1	
Ammonium aluminum alum.	$\text{AmAl}(\text{SeO}_4)_2$	2.3676, 20°.4	Pettersson. U. N. A. 1876.
" " " --	$\text{AmAl}(\text{SeO}_4)_2 \cdot 12\text{H}_2\text{O}$	1.892, m. of 4-	Pettersson. U. N. A. 1874.
" " " --	" --	1.889 } extremes	
" " " --	" --	1.895 } 17°-20°.5	
Rubidium aluminum alum	$\text{RbAl}(\text{SeO}_4)_2 \cdot 12\text{H}_2\text{O}$	2.132, 17°.2	" "
" " " --	" --	2.134, 21°	
" " " --	" --	2.135, 17°.2	
Cæsium aluminum alum--	$\text{CsAl}(\text{SeO}_4)_2 \cdot 12\text{H}_2\text{O}$	2.223, 18°.8	" "
" " " --	" --	2.225, 20°	
Thallium aluminum alum	$\text{TlAl}(\text{SeO}_4)_2 \cdot 12\text{H}_2\text{O}$	2.492, 17°.5	" "
" " " --	" --	2.514, 17°	
Potassium chromium alum	$\text{KCr}(\text{SeO}_4)_2$	2.5190, 20°.3	Pettersson. U. N. A. 1876.
" " " --	$\text{KCr}(\text{SeO}_4)_2 \cdot 12\text{H}_2\text{O}$	2.076, 17°.6	Pettersson. U. N. A. 1874.
" " " --	" --	2.077, 17°	
" " " --	" --	2.081, 17°.2	
Ammonium chromium alum.	$\text{AmCr}(\text{SeO}_4)_2$	2.3585, 15°.5	Pettersson. U. N. A. 1876.
" " " --	$\text{AmCr}(\text{SeO}_4)_2 \cdot 12\text{H}_2\text{O}$	1.980 } 20°	Pettersson. U. N. A. 1874.
" " " --	" --	1.984 }	
Rubidium chromium alum	$\text{RbCr}(\text{SeO}_4)_2 \cdot 12\text{H}_2\text{O}$	2.214, 18°.8	" "
" " " --	" --	2.223, 17°	
Thallium chromium alum	$\text{TlCr}(\text{SeO}_4)_2 \cdot 12\text{H}_2\text{O}$	2.630, 20	" "
Didymium potassium selenate.	$\text{DiK}(\text{SeO}_4)_2$	3.839, 13°	Cleve. U. N. A. 1885.
" " " --	$\text{DiK}(\text{SeO}_4)_2 \cdot 5\text{H}_2\text{O}$	3.174 } 13°	" "
" " " --	" --	3.178 }	
Didymium ammonium selenate.	$\text{DiAm}(\text{SeO}_4)_2 \cdot 5\text{H}_2\text{O}$	2.957 } 15°	" "
" " " --	" --	2.961 }	
Samarium potassium selenate.	$\text{SmK}(\text{SeO}_4)_2$	4.098 } 10°	" "
" " " --	" --	4.129 }	
" " " --	$\text{SmK}(\text{SeO}_4)_2 \cdot 3\text{H}_2\text{O}$	3.566, 10°	" "
" " " --	" --	3.540, 18°	
Samarium ammonium selenate.	$\text{SmAm}(\text{SeO}_4)_2$	3.805, 14°	" "
" " " --	$\text{SmAm}(\text{SeO}_4)_2 \cdot 3\text{H}_2\text{O}$	3.277, 14°	" "
" " " --	" --	3.263, 15°	
" " " --	" --	3.260, 18°.6	
Potassium selenate with nickel sulphate.	$\text{K}_2\text{SeO}_4 \cdot \text{NiSO}_4 \cdot 6\text{H}_2\text{O}$	2.34	Gerichten. B. S. C 20, 80.

NOTE.—For the sp. gr. of some mixtures of sulphates and selenates see Pettersson, Ber. 9, 1676.

XXIV. TELLURATES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Hydrogen tellurate, or telluric acid.	$H_2 Te O_4$	3.425, 18°.8	Clarke. A. J. S. (3), 16, 206.
"	"	3.440, 19°.2	
"	"	3.458, 19°.1	
"	$H_2 Te O_4 \cdot 2 H_2 O$	2.340	Oppenheim. J. 10, 213.
"	"	2.9649, 26°.5	Clarke. A. J. S. (3), 16, 206.
"	"	2.9999, 25°.5	
Ammonium tellurate	$Am_2 Te O_4$	2.986, 24°.5	
"	"	3.012, 25°	" "
"	"	3.024, 24°.5	
Thallium tellurate	$Tl_2 Te O_4$	6.742, 16°	
"	"	6.760, 17°.5	" "
"	$2 Tl_2 Te O_4 \cdot H_2 O$	5.687, 22°	
"	"	5.712, 20°	
Barium tellurate	$Ba Te O_4$	4.5305, 10°	Clarke. A. J. S. (3), 14, 286.
"	"	4.5486, 10°.5	

XXV. CHROMATES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium chromate	$Na_2 Cr O_4$	2.7104, 16°.5	Abbot. F. W. C.
"	"	2.7358, 12°	
"	$Na_2 Cr O_4 \cdot 10 H_2 O$	1.4828, 20°	" "
Sodium dichromate	$Na_2 Cr_2 O_7 \cdot 2 H_2 O$	2.5246, 13°	Stanley. C. N. 54, 195.
Potassium chromate	$K_2 Cr O_4$	2.612	Thomson.
"	"	2.6402	Karsten. Schw. J. 65, 394.
"	"	2.705	Kopp. A. C. P. 36, 1.
"	"	2.682, m. of 10	Playfair and Joule. M. C. S. 2, 401.
"	"	2.711	Playfair and Joule. J. C. S. 1, 137.
"	"	2.72309, 4°	
"	"	2.678, 15°.5	Holker. P. M. (3), 27, 213.
"	"	2.691	Schiff. A. C. P. 107, 64.
"	"	2.7343	Stolba. J. P. C. 97, 503.
"	"	2.719	Schröder. Dm. 1873.
"	"	2.722	
"	"	2.7403, 0°	
"	"	2.7374, 10°	Spring. Ber. 15, 1940.
"	"	2.7345, 20°	
"	"	2.7317, 30°	
"	"	2.7288, 40°	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Potassium chromate	$K_2 Cr O_4$	2.7258, 50°	Spring. Ber. 15, 1940.
" "	"	2.7227, 60°	
" "	"	2.7169, 70°	
" "	"	2.7110, 80°	
" "	"	2.7102, 90°	
" "	"	2.7095, 100°	Karsten. Schw. J. 65, 394.
Potassium dichromate	$K_2 Cr_2 O_7$	2.6027	
" "	"	2.624	
" "	"	2.692, 4°	
" "	"	2.689	
" "	"	2.721	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.6616	
" "	"	2.6806	
" " Pulv.	"	2.702	
" " After fusion.	"	2.677	
" "	"	2.751	Playfair and Joule. J. C. S. 1, 137.
" "	"	2.694	
Potassium trichromate	$K_2 Cr_3 O_{10}$	2.655, m. of 3	
" "	"	3.613	
" "	"	2.676	
" "	"	2.702	Schabus. J. 3, 312.
Potassium chromium chromate.	$K_2 Cr_5 O_{13} \cdot H_2 O$	2.28, 14°	
Ammonium chromate	$Am_2 Cr O_4$	1.9138	
" "	"	1.9203	
" "	"	1.860	
" "	"	1.871	Schiff. A. C. P. 107, 64.
Ammonium dichromate	$Am_2 Cr_2 O_7$	2.367	
" "	"	2.152	
" "	"	2.153	
" "	"	2.1223, 16°	
" "	"	2.1805, 17°	Schröder. Ber. 11, 2019.
Silver chromate	$Ag_2 Cr O_4$	5.770	
" "	"	5.536	
" "	"	5.463	
" "	"	5.583	
Silver dichromate	$Ag_2 Cr_2 O_7$	4.662	W. C. Smith. Am. J. P. 53, 145.
" "	"	4.676	
Silver ammonio-chromate	$Ag_2 Cr O_4 \cdot 4 N H_3$	3.063, m. of 3	
" "	"	2.717	
Magnesium chromate	$Mg Cr O_4 \cdot H_2 O$	2.2301	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.2886	
" "	$Mg Cr O_4 \cdot 7 H_2 O$	1.66, 15°	
" "	"	1.75, 12°	
" "	"	1.7613, 16°	
Trimercuric chromate	$Hg_3 Cr O_6$	7.171, 18°.6	Abbott. F. W. C.
Strontium chromate	$Sr Cr O_4$	3.353	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Barium chromate-----	Ba Cr O ₄ -----	3.90, 11°-----	Bödeker and Giesecke. B. D. Z.
“ “-----	“-----	4.49, 23°-----	Schafarik. J. P. C. 90, 12.
“ “-----	“-----	4.5044-----	Schweitzer. University of Missouri. Special pub., 1876.
“ “-----	“-----	4.296 }-----	Schröder. Dm. 1873.
“ “-----	“-----	4.304 }-----	
“ “ Cryst.-----	“-----	4.60-----	
Lead chromate-----	Pb Cr O ₄ -----	6.004-----	Bourgeois. C. N. 39, 123.
“ “-----	“-----	5.951-----	Mohs. See Böttger.
“ “-----	“-----	5.653-----	Breithaupt. “
“ “ Artif. cryst.-----	“-----	6.118-----	Playfair and Joule. M. C. S. 2, 401.
“ “ “ “-----	“-----	6.29-----	Manross. J. 5, 12.
“ “ Native-----	“-----	5.965, m. of 3-----	Bourgeois. B. S. C. 47, 884.
Diplumbic chromate-----	Pb ₂ Cr O ₅ -----	6.266-----	Schröder. Ber. 11, 2019.
Phœnicochroite-----	Pb ₃ Cr ₂ O ₉ -----	6.266-----	Playfair and Joule. M. C. S. 2, 401.
Potassium ammonium chromate. “-----	K Am Cr O ₄ -----	5.75-----	Dana's Mineralogy.
“ “-----	“-----	2.278 }-----	Schröder. Dm. 1873.
“ “-----	“-----	2.290 }-----	
Potassium calcium chromate. “ “-----	K ₂ Ca (CrO ₄) ₂ . 2H ₂ O-----	2.499 }-----	“ “
“ “ “-----	“-----	2.505 }-----	
“ “ “-----	K ₂ Ca ₄ (CrO ₄) ₅ . 2H ₂ O-----	2.772 }-----	“ “
“ “ “-----	“-----	2.802 }-----	
Magnesium potassium chromate. “-----	K ₂ Mg (CrO ₄) ₂ . H ₂ O-----	2.592 }-----	“ “
“ “-----	“-----	2.608 }-----	
“ “-----	“-----	2.5804 }-----	19°.5 Abbot. F. W. C.
“ “-----	“-----	2.5966 }-----	
Magnesium ammonium chromate. “-----	Am ₂ Mg (CrO ₄) ₂ . 6H ₂ O-----	1.8278, 16°-----	“ “
“ “-----	“-----	1.8293, 17°-----	
“ “-----	“-----	1.8595, 16°-----	
Vauquelinite-----	Pb ₂ Cu Cr ₂ O ₉ -----	5.5—5.78-----	Dana's Mineralogy.
Potassium chlorochromate-----	K Cr O ₃ Cl-----	2.466-----	Playfair and Joule. M. C. S. 2, 401.
“ “-----	“-----	2.49702, 4°-----	Playfair and Joule. J. C. S. 1, 137.
Sodium chromiodate-----	Na Cr I O ₆ . H ₂ O-----	3.21-----	Berg. C. R. 104, 1514.
Potassium chromiodate-----	K Cr I O ₆ -----	3.66-----	“ “
Ammonium chromiodate-----	Am Cr I O ₆ -----	3.50-----	“ “

XXVI. MANGANITES, MANGANATES, AND PERMANGANATES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Barium manganite -----	Ba Mn O ₃ -----	5.85 -----	Rousseau and Saglier. C. R. 98, 141.
Barium manganate -----	Ba Mn O ₄ -----	4.85, 23° -----	Schafarik. J. P. C. 90, 12.
Potassium permanganate-----	K Mn O ₄ -----	2.709 } -----	Kopp. J. 16, 4.
" " -----	" -----	2.710 } -----	

XXVII. MOLYBDATES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ammonium molybdate-----	Am ₂ Mo O ₄ -----	2.238 -----	Various samples. Schröder. Ber. 11, 2212. Baerwald. J. C. S. 50, 17.
" " -----	" -----	2.261 -----	
" " -----	" -----	2.270 -----	
" " -----	" -----	2.286 -----	
" " -----	" -----	2.295 -----	
" " -----	18 Mo O ₃ . 14 N H ₃ . (O H) ₆ . 18 H ₂ O.	2.975 -----	
Strontium molybdate -----	Sr Mo O ₄ -----	4.1348, 21° } -----	F. O. Marsh. F. W. C.
" " -----	" -----	4.1554, 20°.5 } -----	
Barium molybdate-----	Ba Mo O ₄ -----	4.6483, 19°.5 } -----	" "
" " -----	" -----	4.6589, 17°.5 } -----	
Lead molybdate-----	Pb Mo O ₄ -----	8.11, artificial	Manross. J. 5, 11.
" " -----	" -----	6.62 " -----	Cossa. G. C. I. 16, 324.
" " Wulfenite-----	" -----	6.76 -----	Haidinger.
" " "-----	" -----	6.95 -----	Smith. J. 8, 963.
Cerium molybdate-----	Ce ₂ (Mo O ₄) ₃ -----	4.56, cryst. } -----	Cossa. G. C. I. 16, 324.
" " -----	" -----	4.82, ppt. } -----	
Didymium molybdate-----	Di ₂ (Mo O ₄) ₃ -----	4.75, cryst. -----	" "
Samarium molybdate-----	Sm ₂ (Mo O ₄) ₃ -----	5.95 -----	Cleve. B. S. C. 43, 162.
Samarium sodium molybdate.	Sm Na (Mo O ₄) ₂ -----	5.265 -----	Cleve. U. N. A. 1885.

XXVIII. TUNGSTATES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium tungstate-----	$\text{Na}_2 \text{W O}_4$ -----	4.1743, 20°.5 }	J. L. Davis. F. W. C.
“ “-----	“-----	4.1833, 18°.5 }	
“ “-----	$\text{Na}_2 \text{W O}_4 \cdot 2 \text{H}_2 \text{O}$ -----	3.2314, 19° }	
“ “-----	“-----	3.2588, 17°.5 }	
Sodium metatungstate----	$\text{Na}_2 \text{W}_4 \text{O}_{13} \cdot 10 \text{H}_2 \text{O}$ ----	3.8467, 13°----	Scheibler. J. 14, 219.
Sodium polytungstate----	$\text{Na}_6 \text{W}_7 \text{O}_{24}$ -----	5.4983-----	Scheibler. J. 14, 216.
“ “-----	$\text{Na}_6 \text{W}_7 \text{O}_{24} \cdot 16 \text{H}_2 \text{O}$ -----	3.987, 14°-----	“ “
Sodium tungstoso-tungstate.	$\text{Na}_2 \text{W}_3 \text{O}_9^*$ -----	6.617-----	Wright. J. 4, 348.
“ “ “-----	$\text{Na}_2 \text{W}_4 \text{O}_{11}$ -----	7.283-----	Scheibler. J. 14, 223.
Potassium tungstoso-tungstate.	$\text{K}_2 \text{W}_4 \text{O}_{12}^*$ -----	7.085 }	Two preparations. Knorre. J. P. C. (2), 27, 62.
“ “ “-----	“-----	7.095 }	
“ “ “-----	“-----	7.135 }	
“ “ “-----	$\text{K}_2 \text{W}_5 \text{O}_{12}$ -----	7.6-----	Zettnow. J. 20, 224.
“ “ “-----	$\text{K}_2 \text{W}_8 \text{O}_{25}$ -----	6.53-----	Knorre. J. P. C. (2), 27, 92.
Sodium potassium tungstoso-tungstate. “-----	$5 \text{K}_2 \text{W}_4 \text{O}_{12} \cdot 2 \text{Na}_2 \text{W}_5 \text{O}_{15}$ }	7.112----- }	Knorre. J. P. C. (2), 27, 62.
Calcium tungstate-----	Ca W O_4 -----	7.121----- }	
“ “ Scheelite-----	“-----	6.076, artif.-----	Manross. J. 5, 11.
“ “ “-----	“-----	6.04-----	Karsten. Schw. J. 65, 394.
“ “ “-----	“-----	6.03-----	Rammelsberg. J. 3, 752.
“ “ “-----	“-----	6.02-----	Bernoulli. J. 13, 783.
Barium tungstate-----	Ba W O_4 -----	5.0035, 13°.5 }	J. L. Davis. F. W. C.
“ “-----	“-----	5.0422, 15° }	
Barium metatungstate----	$\text{Ba W}_4 \text{O}_{13} \cdot 9 \text{H}_2 \text{O}$ ----	4.298, 14°----	Scheibler. J. 14, 220.
Lead tungstate-----	Pb W O_4 -----	8.232, artif. }	Manross. J. 5, 11.
“ “-----	“-----	8.238 “ }	
“ “-----	“-----	8.1032-----	Kerndt. J. P. C. 42, 113.
“ “-----	“-----	8.1275-----	
Manganese tungstate----	Mn W O_4 -----	6.7, artif.-----	Geuther and Forsberg. J. 14, 224.
“ “ Hübnerite.-----	“-----	7.14-----	Breithaupt. Dana's Min.
“ “ “-----	“-----	7.177, 24°-----	Hillebrand. A. J. S. (3), 27, 357.
Iron tungstate-----	Fe W O_4 -----	7.1, artif.-----	Geuther and Forsberg. J. 14, 224.
“ “ Ferberite-----	“-----	7.169-----	Rammelsberg. J. 17, 855.
“ “ “-----	“-----	6.801-----	Breithaupt. Dana's Min.
“ “ Reinite-----	“-----	6.640-----	Lüdecke. J. 32, 1196.
Iron manganese tungstate----	$2 \text{Mn W O}_4 \cdot 3 \text{Fe W O}_4$ ----	7.0, artif.-----	Geuther and Forsberg. J. 14, 224.

* Philipp (Ber. 15, 506) finds the specific gravity of all the “tungsten bronzes” to vary between 7.2 and 7.3, at 16°—18°.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Wolfram* -----	(Mn Fe) W O ₄ -----	7.155 -----	Mohs. See Böttger.
" -----	" -----	7.097 -----	Gehlen. " "
" Fe ₂ : Mn -----	" -----	7.4581 -----	Sipöcz. Ber. 19, 95.
Nickel tungstate -----	Ni W O ₄ -----	6.8522, 22° -----	J. L. Davis. F.
" -----	" -----	6.8896, 20°.5 -----	W. C.
Cerium tungstate -----	Ce ₂ (W O ₄) ₃ -----	6.514, 12° -----	Cossa and Zechini.
Didymium tungstate -----	Di ₂ (W O ₄) ₃ -----	6.69, 14° -----	Ber. 13, 1861.
Samarium tungstate -----	Sm ₂ O ₃ . 12 W O ₃ . } -----	3.992 } -----	Cossa. Ber. 14, 107.
" -----	35 H ₂ O. } -----	3.996 } 18°.4 -----	{ Cleve. U. N. A.
			{ 1885.

XXIX. BORATES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Hydrogen borate, or boric acid.	H ₃ B O ₃ -----	1.479 -----	Kirwan.
" " " -----	" -----	1.4347, 15° -----	Stolba. J. 16, 667.
" " " -----	" -----	1.493, 20°.5 -----	Favre and Valson.
" " " -----	" -----	1.5463, 0° -----	C. R. 77, 579.
" " " -----	" -----	1.5172, 12° -----	Ditte. Bei. 2, 67.
" " " -----	" -----	1.4165, 60° -----	
" " " -----	" -----	1.3828, 80° -----	
Sodium diborate -----	Na ₂ B ₄ O ₇ -----	2.367 -----	Filhol. Ann. (3),
" " -----	" -----	2.371, 20° -----	21, 415.
" " -----	" -----	2.368, 16° -----	Favre and Valson.
" " -----	" -----	2.370, 14°.2 -----	C. R. 77, 579.
" " -----	" -----	2.373, 18°.5 -----	Bedson and Wil-
" " -----	" -----	2.5, fused -----	liams. Ber. 14,
" " -----	Na ₂ B ₄ O ₇ . 5 H ₂ O -----	1.815 -----	2553.
" " -----	Na ₂ B ₄ O ₇ . 10 H ₂ O -----	1.757 -----	Quincke. P. A. 135,
" " -----	" -----	1.723 -----	642.
" " -----	" -----	1.716 -----	Payen. Q. J. S.
" " -----	" -----	1.74 -----	1828 (1), 483.
" " -----	" -----	1.730, m. of 2 -----	Watson.
" " -----	" -----	1.692 -----	Hassenfratz. Ann.
" " -----	" -----	1.692 -----	28, 3.
" " -----	" -----	1.7156 -----	Mohs. See Böttger.
" " -----	" -----	1.711, 20° -----	Payen. Q. J. S.
" " -----	" -----	1.736 -----	1828 (1), 483.
			Playfair and Joule.
			M. C. S. 2, 401.
			Filhol. Ann. (3),
			21, 415.
			Buignet. J. 14, 15.
			Stolba. J. P. C. 97,
			503.
			Favre and Valson.
			C. R. 77, 579.
			W. C. Smith. Am.
			J. P. 53, 148.

* See Dana's Mineralogy for many other determinations.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Potassium borate -----	$K_2 B_4 O_7$ -----	1.740 -----	Buignet. J. 14, 15.
Pinnoite -----	$Mg B_2 O_4 \cdot 3 H_2 O$ -----	2.27 -----	Staute. Ber. 17, 1584.
Magnesium borate -----	$Mg_3 B_2 O_6$ -----	2.987 -----	Ebelmen. J. 4, 13.
Szaibelyite -----	$Mg_5 B_4 O_{11} \cdot 3 H_2 O$ -----	3.0 -----	Peters. J. 16, 836.
Colemanite -----	$Ca_2 B_6 O_{11} \cdot 5 H_2 O$ -----	2.428 -----	Evans. J. 37, 1927.
Priceite -----	$Ca_3 B_8 O_{15} \cdot 6 H_2 O$ -----	2.262 -----	Silliman. A. J. S. (3), 6, 128.
" -----	" -----	2.298 -----	
" Pandermite -----	" -----	2.48 -----	
Lead borate -----	$Pb B_2 O_4$ -----	5.598 -----	v. Rath. Dana's Min., 3d App.
Lead hydrogen borate -----	$Pb H B_3 O_6$ -----	5.235 -----	Herapath. J. 2, 227.
Jeremerewite -----	$Al B O_3$ -----	3.28 -----	" "
Didymium orthoborate -----	$Di B O_3$ -----	5.680 -----	Damour. J. C. S. 44, 719.
" " -----	" -----	5.721 -----	
Didymium borate -----	$Di_4 B_2 O_9$ -----	5.825, 14° -----	Cleve. U. N. A. 1885.
Samarium orthoborate -----	$Sm B O_3$ -----	6.045 -----	Nordenskiöld. J. 14, 197.
" " -----	" -----	6.052 -----	
Ulexite -----	$Na Ca B_5 O_9 \cdot 6 H_2 O$ -----	1.65 -----	{ Cleve. U. N. A. 1885.
Franklandite -----	$Na_4 Ca_2 B_{12} O_{22} \cdot 15 H_2 O$ -----	1.65 -----	How. A. J. S. (2), 24, 234.
Hydroboracite -----	$Mg_3 Ca_3 B_{16} O_{30} \cdot 18 H_2 O$ -----	1.9 -----	Reynolds. J. 30, 1288.
Sussexite -----	$Mg Mn B_2 O_5 \cdot H_2 O$ -----	3.42 -----	Hess. P. A. 31, 49.
Magnesium chromium borate.	$Mg_6 Cr_6 B_4 O_{21}$ -----	3.82 -----	Brush. A. J. S. (2), 46, 240.
Magnesium iron borate -----	$Mg_6 Fe_6 B_4 O_{21}$ -----	3.85 -----	Ebelmen. J. 4, 13.
Ludwigite -----	$Mg_6 Fe'''_4 Fe''_2 H_3 \cdot B_3 O_{20}$ -----	3.907 -----	" "
" -----	" -----	4.016 -----	Tschermak. J. 27, 1278.
Rhodizite -----	$Al_2 K B_3 O_8$ -----	3.38 -----	Damour. J. 37, 1927.
Boracite -----	$Mg_7 B_{16} O_{30} Cl_2$ -----	2.9134 -----	Karsten. J. 1, 1227.
" -----	" -----	2.974 -----	Mohs. See Böttger.

XXX. NITRATES.

1st. Simple Nitrates.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Hydrogen nitrate, or nitric acid.	$H N O_3$ -----	1.5543, 15°.5 -----	Kirwan. Gilb. Ann. 9, 266.
" " " -----	" -----	1.522, 12°.5 -----	Mitscherlich. P. A. 18, 152.
" " " -----	" -----	1.503 -----	A. Smith. J. 1, 386.
" " " -----	" -----	1.552, 15° -----	Millon. J. P. C. 29, 337.
" " " -----	$H N O_3 \cdot H_2 O$ -----	1.486 -----	A. Smith. J. 1, 386.
" " " -----	$H N O_3 \cdot 3 H_2 O$ -----	1.424 -----	" "
Nitric subhydrate -----	$2 H N O_3 \cdot N_2 O_5$ -----	1.642, 18° -----	Weber. J. P. C. (2), 6, 357.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Lithium nitrate	Li N O_3	2.334	Kremers. J. 10, 67.
" "	"	2.442	Troost. J. 10, 141.
Sodium nitrate	Na N O_3	2.0964	Hassenfratz. Ann. 28, 3.
" "	"	2.096	Klaproth.
" "	"	2.1880	Marx. See Böttger.
" "	"	2.2256	Karsten. Schw. J. 65, 394.
" "	"	2.200	Kopp. A.C.P. 36, 1.
" "	"	2.182, m. of 4	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.2606, 4°	Playfair and Joule. J. C. S. 1, 137.
" "	"	2.26	Filhol. Ann. (3), 21, 415.
" "	"	2.256	Schröder. P. A. 106, 226.
" "	"	2.265	Buignet. J. 14, 15.
" "	"	2.236	Kopp. J. 16, 4.
" "	"	2.246, 15°.5	Holker. P. M. (3), 27, 213.
" "	"	2.24	Page and Keightley. J. C. S. (2), 10, 566.
" "	"	2.25	
" "	"	2.148	W. C. Smith. Am. J. P. 53, 148.
" " Native	"	2.18, 15°.5	Forbes. P. M. (4), 32, 135.
" " "	"	2.290	Hayes.
" "	"	1.878, at the melting p't.	Melts 314°. Braun. P. A. 154, 190.
" "	"	2.24	Brügelmann. Ber. 17, 2359.
" "	$\text{Na N O}_3 \cdot 7 \text{H}_2 \text{O}$	1.357, 0°, l.	Ditte. B. S. C. 24, 366.
Potassium nitrate	K N O_3	1.9369	Hassenfratz. Ann. 28, 3.
" "	"	1.933	Wattson.
" "	"	2.1006	Karsten. Schw. J. 65, 394.
" "	"	2.058	Kopp. A. C. P. 36, 1.
" "	"	2.070, m. of 3	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.1078	Playfair and Joule. J. C. S. 1, 137.
" "	"	2.10657	
" "	"	2.09584	
" " Large crystals.	"	2.109	Grassi. J. 1, 39.
" " Small crystals.	"	2.143	
" " After fusion.	"	2.132	
" "	"	2.100	Schiff. A. C. P. 112, 88.
" "	"	2.086	Schröder. P. A. 106, 226.
" "	"	2.126	Buignet. J. 14, 15.
" "	"	2.105	Kopp. J. 16, 4.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Potassium nitrate	$K N O_3$	2.074, 15°.5	Holker. P. M. (3), 27, 213.
" "	"	2.0845	Stolba. J. P. C. 97, 503.
" "	"	2.0904	
" "	"	2.059, 0°	Quincke. P. A. 135, 642.
" "	"	2.06	Page and Keightley. J. C. S. (2), 10, 566.
" "	"	2.10355, cryst. at 20°.	Nicol. P. M. (5), 15, 94.
" "	"	2.09916, cryst. at 110°.	
" "	"	1.702, at the melting p't.	Braun. (Melts at 342°.) P. A. 154, 190.
Ammonium nitrate	$Am N O_3$	1.579	Hassenfratz. Ann. 28, 3.
" "	"	1.707	Kopp. A. C. P. 36, 1.
" "	"	1.635, m. of 3.	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.737, m. of 2.	Schröder. P. A. 106, 226.
" "	"	1.709	Schiff. A. C. P. 112, 88.
" "	"	1.723	Buignet. J. 14, 15.
" "	"	1.6915	Stolba. J. P. C. 97, 503.
Silver nitrate	$Ag N O_3$	4.3554	Karsten. Schw. J. 65, 394.
" "	"	4.336	Playfair and Joule. M. C. S. 2, 401.
" "	"	4.238	Schröder. P. A. 107, 113.
" "	"	4.253	
" "	"	4.271	
" "	"	4.328	
Thallium nitrate	$Tl N O_3$	5.8	Lamy. J. 15, 186.
" "	"	5.55	Lamy and Des Cloizeaux. Nature 1, 116.
Magnesium nitrate	$Mg (N O_3)_2 \cdot 6 H_2 O$	1.464	Playfair and Joule. M. C. S. 2, 401.
Zinc nitrate	$Zn (N O_3)_2 \cdot 6 H_2 O$	2.063, 13°	Laws. F. W. C.
" "	"	2.067, 15°	
Cadmium nitrate	$Cd (N O_3)_2 \cdot 4 H_2 O$	2.450, 14°	" "
" "	"	2.460, 20°	
Mercurous nitrate	$Hg N O_3 \cdot H_2 O$	4.785, m. of 3.	Playfair and Joule. M. C. S. 2, 401.
Calcium nitrate	$Ca (N O_3)_2$	2.240	Filhol. Ann. (3), 21, 415.
" "	"	2.472	Kremers. J. 10, 67.
" "	"	2.504, 17°.9	Favre and Valson. C. R. 77, 579.
" "	$Ca (N O_3)_2 \cdot 4 H_2 O$	1.78	Filhol. Ann. (3), 21, 415.
" "	"	1.90, 15°.5, s.	Ordway. J. 12, 115.
" "	"	1.79, 15°.5, l.	
" "	"	1.878, 18°	Favre and Valson. C. R. 77, 579.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Strontium nitrate	$\text{Sr (N O}_3)_2$	3.0061	Hassenfratz. Ann. 28, 3.
" "	"	2.8901	Karsten. Schw. J. 65, 394.
" "	"	2.704	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.857	Filhol. Ann. (3), 21, 415.
" "	"	2.962, m. of 4	Schröder. P. A. 106, 226.
" "	"	2.805	Buignet. J. 14, 15.
" "	"	2.980, 16°.8	Favre and Valson. C. R. 77, 579.
" "	$\text{Sr (N O}_3)_2 \cdot 4 \text{ H}_2 \text{ O}$	2.113	Filhol. Ann. (3), 21, 415.
" "	"	2.249, 15°.5	Favre and Valson. C. R. 77, 579.
Barium nitrate	$\text{Ba (N O}_3)_2$	2.9149	Hassenfratz. Ann. 28, 3.
" "	"	3.1848	Karsten. Schw. J. 65, 394.
" "	"	3.284, m. of 5	Playfair and Joule. M. C. S. 2, 401.
" "	"	3.16052, 4°	Playfair and Joule. J. C. S. 1, 137.
" "	"	3.200	Filhol. Ann. (3), 21, 415.
" "	"	3.222	Crystallized at different temperatures. Kremers. J. 5, 15.
" "	"	3.228	
" "	"	3.240	
" "	"	3.242	
" "	"	3.208	Schröder. P. A. 106, 226.
" "	"	3.241	
" "	"	3.404	Buignet. J. 14, 15.
" "	"	3.22	Brügelmann. Ber. 17, 2359.
Lead nitrate	$\text{Pb (N O}_3)_2$	4.068	Hassenfratz. Ann. 28, 3.
" "	"	4.769	Breithaupt. Schw. J. 68, 291.
" "	"	4.3993	Karsten. Schw. J. 65, 394.
" "	"	4.340	Kopp.
" "	"	4.316, m. of 3	Playfair and Joule. M. C. S. 2, 401.
" "	"	4.472, 4°	Playfair and Joule. J. C. S. 1, 137.
" "	"	4.581	Filhol. Ann. (3), 21, 415.
" "	"	4.41, 15°.5	Holker. P. M. (3), 27, 214.
" "	"	4.423	Schröder. P. A. 106, 226.
" "	"	4.429	
" "	"	4.509	
" "	"	4.235	Buignet. J. 14, 15.
" "	"	4.3, 0°	Ditte. Ber. 15, 1438.
Manganese nitrate	$\text{Mn (N O}_3)_2 \cdot 6 \text{ H}_2 \text{ O}$	1.8199, 21°, s.	} Ordway. J. 12, 113.
" "	"	1.8104, 21°, l.	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Nickel nitrate-----	Ni (N O ₃) ₂ . 6 H ₂ O--	2.037, 22° } --	Laws. F. W. C.
“ “-----	“ “-----	2.065, 14° } --	“ “-----
Cobalt nitrate-----	Co (N O ₃) ₂ . 6 H ₂ O--	1.83, 14°-----	Bödeker. B. D. Z.
Copper nitrate-----	Cu (N O ₃) ₂ . 3 H ₂ O--	2.174-----	Hassenfratz. Ann.
“ “-----	“-----	2.047, m. of 3--	28, 3.
Didymium nitrate-----	Di (N O ₃) ₃ . 6 H ₂ O--	2.245 } 19°---	Playfair and Joule.
“ “-----	“-----	2.253 } 19°---	M. C. S. 2, 401.
Samarium nitrate-----	Sm (N O ₃) ₃ . 6 H ₂ O--	2.370 } 20°.4--	Cleve. U. N. A. 1885.
“ “-----	“-----	2.380 } 20°.4--	“ “-----
Ferrie nitrate-----	Fe ₂ (N O ₃) ₆ . 18 H ₂ O--	1.6835, 21°, s.	{ Ordway. J. 12,
“ “-----	“-----	1.6712, 1.	{ 114.
Bismuth nitrate-----	Bi (N O ₃) ₃ . 5 H ₂ O--	2.736, m. of 2--	Playfair and Joule.
“ “-----	“-----	2.823, 13°-----	M. C. S. 2, 401.
Uranyl nitrate-----	U O ₂ (N O ₃) ₂ . 6 H ₂ O--	2.807, 13°-----	Laws. F. W. C.
Gold hydrogen nitrate----	Au H (N O ₃) ₄ . 3 H ₂ O--	2.82 } 19°-----	Bödeker. B. D. Z.
“ “ “-----	“-----	2.87 } 19°-----	{ Gumpach. See
			{ Schottlander,
			{ Wurzburg In.
			{ Diss. 1884.

2d. Basic and Ammonio-Nitrates.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Dimercuric nitrate-----	Hg ₂ N ₂ O ₇ . 2 H ₂ O--	4.242-----	Playfair and Joule.
Mercurous subnitrate-----	Hg ₆ (N O ₃) ₄ O. 3 H ₂ O--	5.967-----	M. C. S. 2, 401.
Lead hydroxynitrate-----	Pb N O ₃ O H-----	5.93, 0°-----	“ “-----
Diplumbic nitrate-----	Pb ₂ N ₂ O ₇ -----	5.645-----	Ditte. Ber. 15, 1438.
Tricupric nitrate-----	Cu ₃ N ₂ O ₈ . H ₂ O--	2.765, m. of 3--	Playfair and Joule.
Tetracupric nitrate-----	Cu ₄ N ₂ O ₉ . 3 H ₂ O--	3.378-----	M. C. S. 2, 401.
“ “-----	“-----	3.371-----	“ “-----
Gerhardtite-----	“-----	3.426-----	Wells and Penfield.
Bismuth subnitrate-----	Bi ₂ N ₂ O ₈ . H ₂ O--	4.551-----	A. J. S. (3), 30, 50.
Bismuth hydroxynitrate----	Bi (O H) ₂ N O ₃ -----	5.260, m. of 2--	Playfair and Joule.
Mercury ammonionitrate----	Hg ₃ N ₂ O ₈ . 2 N H ₃ ----	5.970-----	M. C. S. 2, 401.
Copper ammonionitrate----	Cu (N O ₃) ₂ . 4 N H ₃ ----	1.874, m. of 3--	“ “-----
“ “-----	“-----	1.905, 21°.5--	“ “-----
Purpureocobalt chloronitrate.	Co ₂ (NH ₃) ₁₀ Cl ₂ (NO ₃) ₄	1.667, 16°-----	Evans. F. W. C.
Purpureocobalt bromonitrate.	Co ₂ (NH ₃) ₁₀ Br ₂ (NO ₃) ₄	1.956, 17°.1--	Jørgensen. J. P. C.
Purpureochromium chloronitrate.	Cr ₂ (NH ₃) ₁₀ Cl ₂ (NO ₃) ₄	1.569, 17°.2--	(2), 20, 105.
			Jørgensen. J. P. C.
			(2), 19, 49.
			Jørgensen. J. P. C.
			(2), 20, 105.

XXXI. HYPOPHOSPHITES AND PHOSPHITES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Hydrogen hypophosphite, or hypophosphorous acid	$\text{H}_3 \text{P O}_2$ -----	1.493, 18°.8---	Thomsen. J. P. C. (2), 2, 160.
Barium hypophosphite----	$\text{Ba H}_4 \text{P}_2 \text{O}_4 \cdot \text{H}_2 \text{O}$ ---	2.8718, 10°	Mohr. F. W. C.
" "-----	"-----	2.8971, 17°	
" "-----	"-----	2.839 -----	Schröder. Ber. 11, 2130.
" "-----	"-----	2.911 -----	
" "-----	"-----	2.775, 23°.3	Nye. F. W. C.
" "-----	"-----	2.780, 21°.6	
Magnesium hypophosphite	$\text{Mg H}_4 \text{P}_2 \text{O}_4 \cdot 6 \text{H}_2 \text{O}$ ---	1.5681, 14°.5	Mohr. F. W. C.
" "-----	"-----	1.5886, 12°.5	
Zinc hypophosphite----	$\text{Zn H}_4 \text{P}_2 \text{O}_4 \cdot 6 \text{H}_2 \text{O}$ ---	2.014, 19°.5	Nye. F. W. C.
" "-----	"-----	2.016, 19°.2	
" "-----	"-----	2.020, 20°	
Nickel hypophosphite----	$\text{Ni H}_4 \text{P}_2 \text{O}_4 \cdot 6 \text{H}_2 \text{O}$ ---	1.824, 19°.8	
" "-----	"-----	1.844, 19°	" "
" "-----	"-----	1.856, 18°	
Cobalt hypophosphite----	$\text{Co H}_4 \text{P}_2 \text{O}_4 \cdot 6 \text{H}_2 \text{O}$ ---	1.808	" "
" "-----	"-----	1.809	
" "-----	"-----	1.811	
Hydrogen phosphite, or phosphorous acid.	$\text{H}_3 \text{P O}_3$ -----	1.651, 21°.2---	Thomsen. J. P. C. (2), 2, 160.

XXXII. HYPOPHOSPHATES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Tetrasodium hypophos- phate.	$\text{Na}_4 \text{P}_2 \text{O}_6 \cdot 10 \text{H}_2 \text{O}$ ---	1.832 -----	Dufet. C. R. 102, 1328.
" "-----	"-----	1.8233 -----	Dufet. B. S. M. 10, 77.
Trisodium hypophosphate	$\text{Na}_3 \text{H P}_2 \text{O}_6 \cdot 9 \text{H}_2 \text{O}$ ---	1.7427 -----	" "
Disodium hypophosphate	$\text{Na}_2 \text{H}_2 \text{P}_2 \text{O}_6 \cdot 6 \text{H}_2 \text{O}$ ---	1.8491 -----	" "
" "-----	"-----	1.840 -----	Dufet. C. R. 102, 1328.

XXXIII. PHOSPHATES.

1st. Normal Orthophosphates.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Hydrogen phosphate, or phosphoric acid.	$H_3 P O_4$ -----	1.88 -----	Schiff. J. 12, 41.
“ “ -----	“ -----	1.884, 18°.2----	Thomsen. J. P. C. (2), 2, 160.
Trisodium phosphate -----	$Na_3 P O_4$ -----	2.5111, 12° } -----	C. A. Mohr. F. W. C. }
“ “ -----	“ -----	2.5362, 17°.5 } -----	“ “ }
“ “ -----	$Na_3 P O_4 \cdot 12 H_2 O$ ----	1.622 -----	Playfair and Joule. M. C. S. 2, 401.
“ “ -----	“ -----	1.618 -----	Schiff. A. C. P. 112, 88.
“ “ -----	“ -----	1.6645 -----	Dufet. B. S. M. 10, 77.
Disodium hydrogen phosphate.	$Na_2 H P O_4 \cdot 3 H_2 O$ ----	1.848 -----	Dufet. C. R. 102, 1328.
“ “ “ -----	$Na_2 H P O_4 \cdot 7 H_2 O$ ----	1.6789 -----	Dufet. B. S. M. 10, 77.
“ “ “ -----	$Na_2 H P O_4 \cdot 12 H_2 O$ ----	1.5139 -----	Tünnermann. See Böttger.
“ “ “ -----	“ -----	1.525, m. of 3----	Playfair and Joule. M. C. S. 2, 401.
“ “ “ -----	“ -----	1.586, 8° -----	Kopp. J. 8, 45.
“ “ “ -----	“ -----	1.525 -----	Schiff. A. C. P. 112, 88.
“ “ “ -----	“ -----	1.550 -----	Buignet. J. 14. 15.
“ “ “ -----	“ -----	1.5235, 15° ----	Stolba. J. P. C. 97, 503.
“ “ “ -----	“ -----	1.535 -----	W. C. Smith. Am. J. P. 53, 148.
“ “ “ -----	“ -----	1.5313 -----	Dufet. B. S. M. 10, 77.
Sodium dihydrogen phosphate.	$Na H_2 P O_4 \cdot H_2 O$ ----	2.040 -----	Schiff. A. C. P. 112, 88.
“ “ “ -----	“ -----	2.0547 -----	Dufet. B. S. M. 10, 77.
“ “ “ -----	$Na H_2 P O_4 \cdot 2 H_2 O$ ----	1.915 -----	Joly and Dufet. C. R. 102, 1393.
“ “ “ -----	“ -----	1.9096 -----	Dufet. B. S. M. 10, 77.
Potassium dihydrogen phosphate.	$K H_2 P O_4$ -----	2.298 -----	Schiff. A. C. P. 112, 88.
“ “ “ -----	“ -----	2.403 -----	Buignet. J. 14, 15.
“ “ “ -----	“ -----	3.321 -----	Schröder. Dm. 1873.
“ “ “ -----	“ -----	2.323 -----	
“ “ “ -----	“ -----	2.343 -----	
“ “ “ -----	“ -----	2.380 -----	
Diammonium hydrogen phosphate.	$Am_2 H P O_4$ -----	1.619 -----	Schiff. A. C. P. 112, 88.
“ “ “ -----	“ -----	1.678 -----	Buignet. J. 14, 15.
Ammonium dihydrogen phosphate.	$Am H_2 P O_4$ -----	1.758 -----	Schiff. A. C. P. 112, 88.
“ “ “ -----	“ -----	1.700 -----	Schröder. Dm. 1873.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ammonium dihydrogen phosphate.	$\text{Am H}_2 \text{P O}_4$ -----	1.779 -----	Schröder. Ber. 7, 677.
Sodium potassium hydrogen phosphate.	$\text{Na K H P O}_4 \cdot 7 \text{H}_2 \text{O}$	1.671 -----	Schiff. A. C. P. 112, 88.
Sodium ammonium hydrogen phosphate.	$\text{Na Am H P O}_4 \cdot 4 \text{H}_2 \text{O}$	1.554 -----	" "
Trisilver phosphate-----	$\text{Ag}_3 \text{P O}_4$ -----	7.321 -----	Stromeyer. See Böttger.
Thallium dihydrogen phosphate.	$\text{Tl H}_2 \text{P O}_4$ -----	4.723 -----	Lamy and Des Cloizeaux. Nature 1, 116.
Trithallium phosphate----	$\text{Tl}_3 \text{P O}_4$ -----	6.89, 10° -----	Lamy. J. 18, 247.
Bobierite-----	$\text{Mg}_3 (\text{P O}_4)_2 \cdot 8 \text{H}_2 \text{O}$	2.41 -----	Lacroix. C. R. 106, 632.
Magnesium hydrogen phosphate.	$\text{Mg H P O}_4 \cdot \text{H}_2 \text{O}$ ----	2.326, 15° -----	Schulten. C. R. 100, 877.
Struvite -----	$\text{Am Mg P O}_4 \cdot 6 \text{H}_2 \text{O}$	1.65 -----	Teschemacher. P. M. (3), 28, 548.
Hannayite -----	$\text{Am}_3 \text{Mg}_3 \text{H}_3 (\text{P O}_4)_4 \cdot 8 \text{H}_2 \text{O}$	1.893 -----	v. Rath. B. S. M. 2, 80.
Hopeite -----	$\text{Zn}_3 (\text{P O}_4)_2 \cdot 4 \text{H}_2 \text{O}$	2.76—2.85-----	Dana's Mineralogy.
Brushite-----	$\text{Ca H P O}_4 \cdot 2 \text{H}_2 \text{O}$ ----	2.208 -----	Moore. A. J. S. (2), 39, 43.
Metabrushite-----	$2 \text{Ca H P O}_4 \cdot 3 \text{H}_2 \text{O}$	2.288 -----	Julien. A. J. S. (2), 40, 371.
"-----	"-----	2.356 -----	
"-----	"-----	2.362 -----	
Martinite -----	$\text{Ca}_{10} \text{H}_4 (\text{P O}_4)_8 \cdot \text{H}_2 \text{O}$	2.892—2.896--	Kloos. J. C. S. 54, 233.
Reddingite-----	$\text{Mn}_3 (\text{P O}_4)_2 \cdot 3 \text{H}_2 \text{O}$	3.102 -----	Brush and Dana. A. J. S. (3), 16, 120.
Vivianite-----	$\text{Fe}_3 (\text{P O}_4)_2 \cdot 8 \text{H}_2 \text{O}$ ----	2.58, 15° -----	Rammelsberg. P. A. 64, 411.
"-----	"-----	2.680 -----	Rammelsberg. J. P. C. 86, 344.
Lithiophilite-----	Mn Li P O_4 -----	3.482 -----	Brush and Dana. A. J. S. (3), 18, 45.
Triphylite -----	Fe Li P O_4 -----	3.6 -----	Fuchs. B. J. 15, 211.
"-----	"-----	3.534—3.589--	Penfield. A. J. S. (3), 17, 226.
Hureaulite-----	$\text{Mn}_{10} \text{Fe}_2 \text{H}_3 (\text{P O}_4)_5 \cdot 5 \text{H}_2 \text{O}$	3.185—3.198--	Des Cloizeaux. Ann. (3), 53, 300.
Fairfieldite-----	$\text{MnCa}_2 (\text{P O}_4)_2 \cdot 2 \text{H}_2 \text{O}$	3.15 -----	Brush and Dana. A. J. S. (3), 17, 359.
Dickinsonite -----	$\text{NaCaFeMn}_2 (\text{P O}_4)_3 \cdot \text{H}_2 \text{O}$	3.338 -----	Brush and Dana. A. J. S. (3), 16, 114.
"-----	"-----	3.343 -----	
Fillowite -----	$\text{Na}_2 \text{CaFeMn}_6 (\text{P O}_4)_6 \cdot \text{H}_2 \text{O}$	3.43 -----	Brush and Dana. A. J. S. (3), 17, 363.
Strengite -----	$\text{Fe}''' \text{P O}_4 \cdot 2 \text{H}_2 \text{O}$ ----	2.87 -----	Nies. Z. K. M. 1, 94.
" Artificial -----	"-----	2.74 -----	Schulten. Z. K. M. 12, 640.
Koninckite -----	$\text{Fe}''' \text{P O}_4 \cdot 3 \text{H}_2 \text{O}$ ----	2.3 -----	Cesaro. A. J. S. (3), 29, 342.
Aluminum phosphate. Cryst.	Al P O_4 -----	2.59 -----	Schulten. C. R. 98, 1584.
Berlinite-----	$4 \text{Al P O}_4 \cdot \text{H}_2 \text{O}$ ----	2.64 -----	Blomstrand. Dana's Min.
Callainite. (Variscite?) --	$2 \text{Al P O}_4 \cdot 5 \text{H}_2 \text{O}$ ----	2.50 -----	Damour. C. R. 59, 936.
" "-----	"-----	2.52 -----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Variscite-----	$\text{Al P O}_4 \cdot 2 \text{ H}_2 \text{ O}$ ----	2.408, 18°----	Petersen. N. J. 1871, 357.
Zepharovichite-----	$\text{Al P O}_4 \cdot 3 \text{ H}_2 \text{ O}$ ----	2.384-----	Boricky. J. 22, 1235.
Xenotime-----	Y P O_4 -----	4.54-----	Smith. J. 7, 857.
"-----	"-----	4.45-----	Zchau. J. 8, 966.
"-----	"-----	4.51-----	
"-----	"-----	4.39-----	
Cerium phosphate-----	Ce P O_4 -----	5.22, 14°----	Damour. J. 10, 686.
Cryptolite-----	"-----	4.6-----	Grandeau. Ann. (6), 8, 193.
"-----	"-----	4.78-----	Wöhler. P. A. 67, 424.
Rhabdophane (Scovillite)-----	$2 (\text{La Di Y Er}) \text{ P O}_4 \cdot \text{H}_2 \text{ O}$ ----	3.9—4.01-----	Watts. J. 2, 773.
Monazite-----	$(\text{Ce La Di}) \text{ P O}_4$ -----	5.203-----	Brush and Penfield. A. J. S. (3), 25, 459.
"-----	"-----	5.174-----	Genth. Dana's Min. Rammelsberg. J. 30, 1298.
"-----	"-----	5.106—5.110----	Kokscharow. J. 15, 762.
"-----	"-----	5.174-----	Rammelsberg. Z. G. S. 29, 79.
Didymium phosphate-----	Di P O_4 -----	5.34, 15°----	Grandeau. Ann. (6), 8, 193.
Samarium phosphate-----	Sm P O_4 -----	5.826-----	Cleve. U. N. A. 1885.
"-----	"-----	5.830-----	
Autunite-----	$\text{Ca (U O}_2)_2 (\text{P O}_4)_2 \cdot 8 \text{ H}_2 \text{ O}$ ----	3.05—3.19-----	Dana's Mineralogy.
Torbernite-----	$\text{Cu (U O}_2)_2 (\text{P O}_4)_2 \cdot 8 \text{ H}_2 \text{ O}$ ----	3.4—3.6-----	" "
Uranocircite-----	$\text{Ba (U O}_2)_2 (\text{P O}_4)_2 \cdot 8 \text{ H}_2 \text{ O}$ ----	3.53-----	Weisbach. J. 30, 1303.
Sodium zirconium phosphate.	$\text{Na}_8 \text{ Zr (P O}_4)_4$ -----	2.43, 14°----	Troost and Ouvrard. C. R. 105, 30.
" " "-----	$\text{Na}_{12} \text{ Zr}_3 (\text{P O}_4)_8$ -----	2.88, 14°----	" "
" " "-----	$\text{Na Zr}_2 (\text{P O}_4)_3$ -----	3.10, 12°----	" "
Potassium zirconium phosphate.	$\text{K}_2 \text{ Zr (P O}_4)_2$ -----	3.076, 7°----	Troost and Ouvrard. C. R. 102, 1422.
" " "-----	$\text{K Zr}_2 (\text{P O}_4)_3$ -----	3.18, 12°----	" "
Sodium thorium phosphate.	$\text{Na}_5 \text{ Th (P O}_4)_3$ -----	3.843, 7°----	Troost and Ouvrard. C. R. 105, 30.
" " "-----	$\text{Na Th}_2 (\text{P O}_4)_3$ -----	5.62, 16°----	" "
Potassium thorium phosphate.	$\text{K}_{12} \text{ Th}_3 (\text{P O}_4)_8$ -----	3.95, 12°----	Troost and Ouvrard. C. R. 102, 1422.
" " "-----	$\text{K}_2 \text{ Th (P O}_4)_3$ -----	4.688, 7°----	" "
" " "-----	$\text{K Th}_2 (\text{P O}_4)_3$ -----	5.75, 12°----	" "

2d. Basic Orthophosphates.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Isoclasite -----	$\text{Ca}_2(\text{OH})\text{PO}_4 \cdot 2\text{H}_2\text{O}$	2.92 -----	Sandberger. J. P. C. (2), 2, 125.
Libethenite -----	$\text{Cu}_2(\text{OH})\text{PO}_4$	3.6—3.8 -----	Hermann. J. P. C. 37, 175.
Tagilite -----	$\text{Cu}_2(\text{OH})\text{PO}_4 \cdot \text{H}_2\text{O}$	3.50 -----	Hermann. J. P. C. 37, 184.
“ -----	“ -----	4.076 -----	Breithaupt. B. H. Ztg. 24, 309.
Veszelyite -----	$\text{Cu}_2(\text{OH})\text{PO}_4 \cdot 2\text{H}_2\text{O}$	3.531 -----	Schrauf. Z. K. M. 4, 31.
Pseudomalachite -----	$\text{Cu}_3(\text{OH})_3\text{PO}_4$	4.175 -----	Schrauf. Z. K. M. 4, 14.
Ehlite -----	$\text{Cu}_5(\text{OH})_4(\text{PO}_4)_2 \cdot \text{H}_2\text{O}$	4.102 -----	Schrauf. Z. K. M. 4, 13.
Dihydrate -----	$\text{Cu}_5(\text{OH})_4(\text{PO}_4)_2$	4.309 -----	Schrauf. Z. K. M. 4, 12.
Triploidite -----	$(\text{Mn Fe})_2(\text{OH})\text{PO}_4$	3.697 -----	Brush and Dana. A. J. S. (3), 16, 42.
Ludlamite -----	$\text{Fe}_7(\text{OH})_2(\text{PO}_4)_4 \cdot 8\text{H}_2\text{O}$	3.12 -----	Maskelyne and Field. J. 30, 1300.
Picite -----	$\text{Fe}_{14}(\text{OH})_{18}(\text{PO}_4)_8 \cdot 27\text{H}_2\text{O}$	2.83 -----	Streng. J. 34, 1377.
Dufrenite -----	$\text{Fe}'''_2(\text{OH})_3\text{PO}_4$	3.227 -----	Dufrenoy. Dana's Min.
“ -----	“ -----	3.382 -----	Campbell. A. J. S. (3), 22, 65.
“ -----	“ -----	3.454 -----	Massie. J. 33, 1433.
“ -----	“ -----	3.293 -----	Boricky. S. W. A. 56 (1), 7.
Cacoxenite -----	$\text{Fe}'''_4(\text{OH})_6(\text{PO}_4)_2 \cdot 9\text{H}_2\text{O}$	3.38 -----	Dana's Mineralogy.
Calcioferrite -----	$\text{Fe}'''_3\text{Ca}_3(\text{OH})_3(\text{PO}_4)_4 \cdot 8\text{H}_2\text{O}$	2.523 } -----	Reissig. Dana's Min.
“ -----	“ -----	2.529 } -----	“ -----
Borickite -----	$\text{Fe}'''_5\text{Ca}(\text{OH})_{11}(\text{PO}_4)_2 \cdot 3\text{H}_2\text{O}$	2.696—2.707 -----	Boricky. J. 20, 1002.
Chalcosiderite -----	$\text{Fe}'''_6\text{Cu}(\text{OH})_8(\text{PO}_4)_4 \cdot 4\text{H}_2\text{O}$	3.108 -----	Maskelyne. J. C. S. 28, 586.
Andrewsite -----	$\text{Fe}'''_8\text{CuFe}''_4(\text{PO}_4)_8(\text{OH})_6$	3.475 -----	“ “
Evansite -----	$\text{Al}_3(\text{OH})_6\text{PO}_4 \cdot 6\text{H}_2\text{O}$	1.939 -----	Forbes. P. M. (4), 28, 341.
Trolleite -----	$\text{Al}_4(\text{OH})_3(\text{PO}_4)_3$	3.10 -----	Blomstrand. Dana's Min.
Augelite -----	$\text{Al}_4(\text{OH})_6(\text{PO}_4)_2$	2.77 -----	“ “
Turquoise -----	$\text{Al}_4(\text{OH})_6(\text{PO}_4)_2 \cdot \text{H}_2\text{O}$	2.621 -----	Hermann. J. P. C. 33, 282.
“ -----	“ -----	2.426—2.651 -----	Blake. J. 11, 722.
Peganite -----	$\text{Al}_4(\text{OH})_6(\text{PO}_4)_2 \cdot 3\text{H}_2\text{O}$	2.492—2.496 -----	Breithaupt. Schw. J. 60, 308.
Fischerite -----	$\text{Al}_4(\text{OH})_6(\text{PO}_4)_2 \cdot 5\text{H}_2\text{O}$	2.46 -----	Hermann. J. P. C. 33, 286.
Cæruleolactite -----	$\text{Al}_6(\text{OH})_6(\text{PO}_4)_4 \cdot 7\text{H}_2\text{O}$	2.552, 19° } ----- 2.593, 18° } -----	Petersen. N. J. 1871, 353.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Wavellite -----	$\text{Al}_6 (\text{O H})_6 (\text{P O}_4)_4 \cdot 9 \text{H}_2 \text{O}.$	2.337 -----	Haidinger. Dana's Min.
" -----	" -----	2.316 -----	Richardson. Dana's Min.
Planerite -----	$\text{Al}_6 (\text{O H})_6 (\text{P O}_4)_4 \cdot 12 \text{H}_2 \text{O}.$	2.65 -----	Hermann. J. 15, 764.
Sphærite -----	$\text{Al}_{10} (\text{O H})_{18} (\text{P O}_4)_4 \cdot 7 \text{H}_2 \text{O}.$	2.536 -----	Zepharovich. S. W. A. 56, 24.
Lazulite -----	$\text{Al}_2 \text{Mg} (\text{OH})_2 (\text{PO}_4)_2$	3.122 -----	Smith and Brush. J. 6, 840.
" -----	" -----	3.106—3.123 --	Rammelsberg. P. A. 64, 261.
" -----	" -----	3.108 -----	Chapman. J. 14, 1033.
Cirrolite -----	$\text{Al}_2 \text{Ca}_3 (\text{O H})_3 (\text{P O}_4)_3$	3.08 -----	Blomstrand. Dana's Min.
Plumbogummite -----	$\text{Al}_4 \text{Pb} (\text{O H})_8 (\text{PO}_4)_2 \cdot 5 \text{H}_2 \text{O}.$	4.88, 15°.6 ----	Dufrenoy. Ann. (2), 59, 440.
" Hitchcockite -----	" -----	4.014, 20° ----	Genth. A. J. S. (2), 23, 424.
Eosphorite -----	$\text{Al Mn} (\text{O H})_2 \text{P O}_4 \cdot \text{H}_2 \text{O}.$	3.124 -----	Brush and Dana. A. J. S. (3), 16, 35.
" -----	" -----	3.134 -----	
" -----	" -----	3.145 -----	
Childrenite -----	$\text{Al Fe} (\text{O H})_2 \text{P O}_4 \cdot \text{H}_2 \text{O}.$	3.22 -----	Church. J. C. S. 26, 104.
Barrandite -----	$\text{Al Fe}''' (\text{P O}_4)_2 \cdot 4 \text{H}_2 \text{O}.$	2.576 -----	Zepharovich. J. 20, 1000.

3d. Meta- and Pyrophosphates.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium metaphosphate ---	Na P O_3 -----	2.4756, 19°.5 } -----	Mohr. F.W. C.
" " -----	" -----	2.4769, 18° } -----	
" " -----	" -----	2.503, 20° ----	
Potassium metaphosphate	K P O_3 -----	2.2513 } 14°.5	Mohr. F.W. C.
" " -----	" -----	2.2639 } -----	
Didymium metaphosphate	$\text{Di P}_5 \text{O}_{14}$ -----	3.333 } 18°.4	Cleve. U. N. A. 1885.
" " -----	" -----	3.358 } -----	
Samarium metaphosphate	$\text{Sm P}_5 \text{O}_{14}$ -----	3.485 } 28°.8	" "
" " -----	" -----	3.489 } -----	
Thorium metaphosphate ---	$\text{Th P}_4 \text{O}_{12}$ -----	4.08, 16°.4 ----	Troost. C. R. 101, 210.
Sodium pyrophosphate ---	$\text{Na}_4 \text{P}_2 \text{O}_7$ -----	2.534 -----	Schröder. Dm. 1873.
" " -----	" -----	2.3613 } 17°	Mohr. F.W. C.
" " -----	" -----	2.3851 } -----	
" " -----	$\text{Na}_4 \text{P}_2 \text{O}_7 \cdot 10 \text{H}_2 \text{O}$ -----	1.836 -----	Playfair and Joule. M. C. S. 2, 401.
" " -----	" -----	1.7726, 21° ----	Mohr. F.W. C.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium pyrophosphate---	$\text{Na}_4 \text{P}_2 \text{O}_7 \cdot 10 \text{H}_2 \text{O}$ ---	1.824 -----	Dufet. C. R. 102, 1328.
" " -----	" -----	1.8151 -----	Dufet. B. S. M. 10, 77.
Sodium hydrogen pyrophosphate.	$\text{Na}_2 \text{H}_2 \text{P}_2 \text{O}_7 \cdot 6 \text{H}_2 \text{O}$	1.8616 -----	" "
Potassium pyrophosphate---	$\text{K}_4 \text{P}_2 \text{O}_7$ -----	2.33 -----	Brügelmann. Ber. 17, 2359.
Silver pyrophosphate -----	$\text{Ag}_4 \text{P}_2 \text{O}_7$ -----	5.306 -----	Stromeyer. See Böttger.
" " -----	" -----	5.2596 -----	Tünnermann. See Böttger.
Thallium pyrophosphate -	$\text{Tl}_4 \text{P}_2 \text{O}_7$ -----	6.786 -----	Lamy and Des Cloizeaux. Nature 1, 116.
Magnesium pyrophosphate	$\text{Mg}_2 \text{P}_2 \text{O}_7$ -----	2.220 -----	Schröder. Dm. 1873.
" " -----	" -----	2.559, 18° } -----	Lewis. F. W. C.
" " -----	" -----	2.598, 22° } -----	
Zinc pyrophosphate-----	$\text{Zn}_2 \text{P}_2 \text{O}_7$ -----	3.7538 } -----	" "
" " -----	" -----	3.7574 } 23° -----	
Manganese pyrophosphate	$\text{Mn}_2 \text{P}_2 \text{O}_7$ -----	3.5742, 26° } -----	" "
" " -----	" -----	3.5847, 20° } -----	
Nickel pyrophosphate-----	$\text{Ni}_2 \text{P}_2 \text{O}_7$ -----	3.9064, 27° } -----	" "
" " -----	" -----	3.9303, 25° } -----	
Cobalt pyrophosphate-----	$\text{Co}_2 \text{P}_2 \text{O}_7$ -----	3.710, 25° } -----	" "
" " -----	" -----	3.746, 23° } -----	
Barium pyrophosphate-----	$\text{Ba}_2 \text{P}_2 \text{O}_7 \cdot \text{H}_2 \text{O}$ -----	3.574 } -----	Schröder. Dm. 1873.
" " -----	" -----	3.582 } -----	
" " -----	" -----	3.590 } -----	
Silicon pyrophosphate-----	$\text{Si P}_2 \text{O}_7$ -----	3.1, 14° -----	Hautefeuille and Margottet. C. R. 96, 1053.
Zirconium pyrophosphate	$\text{Zr P}_2 \text{O}_7$ -----	3.12 -----	Knop. A. C. P. 159, 48.
" " -----	" -----	3.14 -----	
Tin pyrophosphate -----	$\text{Sn P}_2 \text{O}_7$ -----	3.61 -----	Knop. A. C. P. 159, 39.
Basic tin pyrophosphate--	$\text{Sn}_2 (\text{P}_2 \text{O}_7) \text{O}_2$ -----	3.87 } -----	" "
" " "-----	" -----	3.98 } -----	
Basic titanium pyrophosphate.	$\text{Ti}_3 (\text{P}_2 \text{O}_7) \text{O}_4$ -----	2.9 -----	Knop. A. C. P. 157, 365.

XXXIV. VANADATES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium octovanadate ----	$\text{Na}_{12} \text{V}_8 \text{O}_{26} \cdot 4 \text{H}_2 \text{O}$ ----	2.85, 18° ----	Carnelley. J. C. S. (2), 11, 323.
Silver octovanadate -----	$\text{Ag}_{12} \text{V}_8 \text{O}_{26}$ -----	5.67, 18° -----	" "
Thallium metavanadate ----	$\text{Tl} \text{V} \text{O}_3$ ----	6.019, 11° ----	" "
Thallium pyrovanadate ----	$\text{Tl}_4 \text{V}_2 \text{O}_7$ ----	8.21, 18°.5, } ppt. }	" "
" " ----	" ----	8.812, 18°.5, } fused. }	" "
Thallium orthovanadate ----	$\text{Tl}_3 \text{V} \text{O}_4$ ----	8.6, 17° ----	" "
Thallium octovanadate ----	$\text{Tl}_{12} \text{V}_8 \text{O}_{26}$ ----	8.59, 17°.5 ----	" "
Thallium decavanadate ----	$\text{Tl}_{12} \text{V}_{10} \text{O}_{31}$ ----	7.86, 17° ----	" "
Magnesium vanadate. Brown. " " Red	$\text{Mg}_3 \text{V}_{10} \text{O}_{23} \cdot 28 \text{H}_2 \text{O}$ ----	2.199 } 18° ----	Sugiura and Baker. J. C. S. 35, 716.
Pucherite -----	$\text{Bi} \text{V} \text{O}_4$ -----	5.91 -----	Frenzel. J. P. C. (2), 4, 227.
Dechenite -----	$\text{Pb}_3 \text{V}_2 \text{O}_8 \cdot \text{Zn}_3 \text{V}_2 \text{O}_8$ ----	5.81 -----	Bergemann. J. 3, 753.
" -----	" -----	5.83 -----	Tschermak. J. 14, 1021.
" Eusynchite -----	" -----	5.596 -----	Rammelsberg.
Descloizite -----	$\text{Pb} \text{Zn} (\text{O} \text{H}) \text{V} \text{O}_4$ ----	5.839 -----	Damour. J. 7, 855.
" -----	" -----	5.915 -----	{ From two samples. Rammelsberg. J. 33, 1428.
" -----	" -----	6.080 -----	
" -----	" -----	6.200 -----	{ Penfield.* A. J. S. (3), 26, 361.
" -----	" -----	6.205 -----	
" Light -----	" -----	6.105—6.108 } Genth. Am. Phil. Soc. 1885.	{
" Dark -----	" -----	5.814—5.882 } Roscoe. J. 29, 1259.	
Mottramite† -----	$\text{Pb} \text{Cu} (\text{O} \text{H}) \text{V} \text{O}_4$ ----	5.894 -----	Credner. Dana's Min.
Volborthite† -----	$\text{R}_3 (\text{OH})_3 \text{VO}_4 \cdot 6 \text{H}_2 \text{O}$ ----	3.55 -----	
Didymium vanadate -----	$\text{Di} \text{V} \text{O}_4$ -----	4.959 } 21°.2 ----	Cleve. U. N. A. 1885.
" " -----	" -----	4.963 } 18°.5 ----	
Didymium metavanadate ----	$\text{Di} \text{V}_5 \text{O}_{14} \cdot 14 \text{H}_2 \text{O}$ ----	2.492 } 18°.5 ----	" "
" " -----	" -----	2.497 } 17°.5 ----	
Samarium metavanadate ----	$\text{Sm} \text{V}_5 \text{O}_{14} \cdot 12 \text{H}_2 \text{O}$ ----	2.628, 17°.5 } 17°.8 ----	" "
" " -----	" -----	2.620, 17°.8 } 17°.5 ----	
" " -----	$\text{Sm} \text{V}_5 \text{O}_{14} \cdot 14 \text{H}_2 \text{O}$ ----	2.52°, 17°.5 } 17°.8 ----	" "
" " -----	" -----	2.526, 17°.8 } 15° ----	
Sodium vanadium vanadate. " " " ----	$2 \text{Na}_2 \text{O} \cdot 2 \text{V}_2 \text{O}_4 \cdot \text{V}_2 \text{O}_5 \cdot 6 \text{H}_2 \text{O}$ ----	1.389, 15° ----	Brierly. J. C. S. 49, 30.
" " " ----	$2 \text{Na}_2 \text{O} \cdot 2 \text{V}_2 \text{O}_4 \cdot \text{V}_2 \text{O}_5 \cdot 13 \text{H}_2 \text{O}$ ----	1.327, 15° ----	" "
Potassium vanadium vanadate. " " " ----	$5 \text{K}_2 \text{O} \cdot 2 \text{V}_2 \text{O}_4 \cdot 4 \text{V}_2 \text{O}_5 \cdot \text{H}_2 \text{O}$ ----	1.213, 15° ----	" "
Ammonium vanadium vanadate. " " " ----	$3 \text{Am}_2 \text{O} \cdot 2 \text{V}_2 \text{O}_4 \cdot 4 \text{V}_2 \text{O}_5 \cdot 6 \text{H}_2 \text{O}$ ----	1.335, 15° ----	" "

* Penfield's mineral contained some copper and arsenic. Frenzel's tritochorite (G. 6.25) is similar.

† Formula somewhat doubtful.

‡ R in this formula = $\frac{3}{4} \text{Cu}$ and $\frac{1}{4} \text{Ca} + \text{Ba}$.

XXXV. ARSENITES AND ARSENATES.

1st. Normal Orthoarsenates.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium dihydrogen arsenate.	$\text{Na H}_2 \text{As O}_4 \cdot \text{H}_2 \text{O}$	2.535	Schiff. A. C. P. 112, 88.
" " "	"	2.6700	Dufet. B. S. M. 10, 77.
" " "	$\text{Na H}_2 \text{As O}_4 \cdot 2 \text{H}_2 \text{O}$	2.320	Joly and Dufet. C. R. 102, 1393.
" " "	"	2.3093	Dufet. B. S. M. 10, 77.
Disodium hydrogen arsenate.	$\text{Na}_2 \text{H As O}_4 \cdot 7 \text{H}_2 \text{O}$	1.871	Schiff. A. C. P. 112, 88.
" " "	"	1.8825	Dufet. B. S. M. 10, 77.
" " "	$\text{Na}_2 \text{H As O}_4 \cdot 12 \text{H}_2 \text{O}$	1.759	Thomson. See Böttger.
" " "	"	1.736	Playfair and Joule. M. C. S. 2, 401.
" " "	"	1.670	Schiff. A. C. P. 112, 88.
" " "	"	1.6675	Dufet. B. S. M. 10, 77.
Trisodium arsenate	$\text{Na}_3 \text{As O}_4$	2.8128	} 21° Stallo. F. W. C.
" " "	"	2.8577	
" " "	$\text{Na}_3 \text{As O}_4 \cdot 12 \text{H}_2 \text{O}$	1.804	Playfair and Joule. M. C. S. 2, 401.
" " "	"	1.762	Schiff. A. C. P. 112, 88.
" " "	"	1.7593	Dufet. B. S. M. 10, 77.
Potassium dihydrogen arsenate.	$\text{K H}_2 \text{As O}_4$	2.638	Thomson. See Böttger.
" " "	"	2.832	Schiff. A. C. P. 112, 88.
" " "	"	2.844	} Schröder. Dm. 1873.
" " "	"	2.853	
" " "	"	2.855	
" " "	"	2.862	Topsoë. B. S. C. 19, 246.
Ammonium dihydrogen arsenate.	$\text{Am H}_2 \text{As O}_4$	2.249	Schiff. A. C. P. 112, 88.
" " "	"	2.299	} Schröder. Dm. 1873.
" " "	"	2.309	
" " "	"	2.312	
" " "	"	2.308	Topsoë. C. C. 4, 76.
Diammonium hydrogen arsenate.	$\text{Am}_2 \text{H As O}_4$	1.989	Schiff. A. C. P. 112, 88.
Potassium sodium hydrogen arsenate.	$\text{K Na H As O}_4 \cdot 7 \text{H}_2 \text{O}$	1.884	Schiff. A. C. P. 112, 88.
Ammonium sodium hydrogen arsenate.	$\text{Am Na H As O}_4 \cdot 4 \text{H}_2 \text{O}$	1.838	" "
Hoernesite	$\text{Mg}_3 (\text{As O}_4)_2 \cdot 8 \text{H}_2 \text{O}$	2.474	Haidinger. J. 13, 784.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Magnesium hydrogen arsenate.	$(\text{H Mg As O}_4)_2 \cdot \text{H}_2\text{O}$	3.155, 15° ----	Schulten. C. R. 100, 877.
Köttigite -----	$\text{Zn}_3 (\text{As O}_4)_2 \cdot 8 \text{H}_2\text{O}$	3.1 -----	Köttig. J. 2, 771.
Native nickel arsenate ----	$\text{Ni}_3 (\text{As O}_4)_2$ -----	4.982 -----	Bergemann. J. 11, 728.
Erythrite -----	$\text{Co}_3 (\text{As O}_4)_2 \cdot 8 \text{H}_2\text{O}$	2.948 -----	Dana's Mineralogy.
Cabrerite -----	$(\text{Ni Co Mg})_3 (\text{As O}_4)_2 \cdot 8 \text{H}_2\text{O}$	2.96 -----	Ferber. B. H. Ztg. 22, 306.
Roselite -----	$(\text{Ca Co Mg})_3 (\text{As O}_4)_2 \cdot 2 \text{H}_2\text{O}$	3.5—3.6 -----	Schrauf. N. J. 1874, 870.
" -----	" -----	3.46, 3° -----	Weisbach. N. J. 1874, 871.
Caryinite -----	$(\text{Pb Mn Ca})_3 (\text{As O}_4)_2$	4.25 -----	Lundström. Dana's Min., 3d App.
Berzeliite -----	$\text{Mg}_3 \text{Ca}_3 (\text{As O}_4)_4$ ----	2.52 -----	Dana's Mineralogy.
Haidingerite -----	$\text{H Ca As O}_4 \cdot \text{H}_2\text{O}$ ----	2.848 -----	Turner. Dana's Min.
Pharmacolite -----	$2 \text{H Ca As O}_4 \cdot 5 \text{H}_2\text{O}$	2.64—2.73 ----	Dana's Mineralogy.
Wapplerite -----	$\text{H} (\text{Ca Mg}) \text{As O}_4 \cdot 7 \text{H}_2\text{O}$	2.48 -----	Frenzel. Dana's Min., 2d App.
Forbesite -----	$2 \text{H} (\text{Co Ni}) \text{As O}_4 \cdot 7 \text{H}_2\text{O}$	3.086 -----	Forbes. P. M. (4), 25, 103.
Scorodite -----	$\text{Fe}''' \text{As O}_4 \cdot 2 \text{H}_2\text{O}$	3.11 -----	} Damour. Ann. (3), 10, 406.
" -----	" -----	3.18 -----	
" Artificial -----	" -----	3.28 -----	
Carminite -----	$\text{Pb}_3 \text{Fe}'''_{10} (\text{As O}_4)_{12}$	4.105 -----	Dana's Mineralogy.
Trögerite -----	$(\text{U O}_2)_3 (\text{As O}_4)_2 \cdot 12 \text{H}_2\text{O}$	3.23 -----	Weisbach. N. J. 1873, 316.
Uranospinite -----	$(\text{U O}_2)_2 \text{Ca} (\text{As O}_4)_2 \cdot 8 \text{H}_2\text{O}$	3.45 -----	" "
Zeunerite -----	$(\text{U O}_2)_2 \text{Cu} (\text{As O}_4)_2 \cdot 8 \text{H}_2\text{O}$	3.53 -----	" "

2d. Basic Orthoarsenates.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Adamite -----	$\text{Zn}_2 (\text{O H}) \text{As O}_4$ ----	4.338, 18° ----	Friedel. C. R. 62, 692.
Native nickel arsenate ----	$\text{Ni}_5 \text{O}_2 (\text{As O}_4)_2$ -----	4.838 -----	Bergemann. J. 11, 728.
Olivenite -----	$\text{Cu}_2 (\text{O H}) \text{As O}_4$ ----	4.378 -----	Damour. Ann. (3), 13, 404.
" -----	" -----	4.135 -----	Hermann. J. P. C. 33, 291.
Clinoclasite -----	$\text{Cu}_3 (\text{O H})_3 \text{As O}_4$ ----	4.19—4.36 ----	Dana's Mineralogy.
" -----	" -----	4.312 -----	Damour. Ann. (3), 13, 404.
" -----	" -----	4.28, 19° -----	Hillebrand. Private communication.
Euchroite -----	$\text{Cu}_3 (\text{OH})_3 \text{As O}_4 \cdot 6 \text{H}_2\text{O}$	3.389 -----	Dana's Mineralogy.
Erinite -----	$\text{Cu}_5 (\text{O H})_4 (\text{As O}_4)_2$	4.043 -----	" "

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Cornwallite -----	$\text{Cu}_5 (\text{O H})_4 (\text{As O}_4)_2 \cdot \text{H}_2 \text{O}.$	4.160 -----	Dana's Mineralogy.
Tyrolite -----	$\text{Cu}_5 (\text{O H})_4 (\text{As O}_4)_2 \cdot 7 \text{H}_2 \text{O}.$	3.02—3.098----	" "
" -----	" -----	3.162 -----	Church. J.C.S. 26, 108.
" -----	" -----	3.27, 20°.5----	Hillebrand. Private communication.
Chalcophyllite -----	$\text{Cu}_8 (\text{O H})_{10} (\text{As O}_4)_2 \cdot 7 \text{H}_2 \text{O}.$	2.659 -----	Damour. Ann. (3), 13, 404.
" -----	" -----	2.435 -----	Hermann. J. P. C. 33, 294.
Conichalcite -----	$\text{Cu Ca (O H) As O}_4 \cdot$	4.123 -----	Fritzsche. J. 2, 772.
Bayldonite -----	$\text{Cu}_3 \text{Pb(OH)}_2 (\text{As O}_4)_2 \cdot \text{H}_2 \text{O}.$	5.35 -----	Church. J. C. S. 18, 265.
Liroconite -----	$\text{Cu}_2 \text{Al (O H)}_4 \text{As O}_4 \cdot 4 \text{H}_2 \text{O}.$	2.926 -----	Haidinger. Dana's Min.
" -----	" -----	2.964 -----	Damour. Ann. (3), 13, 404.
" -----	" -----	2.985 -----	Hermann. J. P. C. 33, 296.
Chenevixite -----	$\text{Cu}_3 \text{Fe}'''_2 (\text{O H})_6 (\text{As O}_4)_2 \cdot$	3.93 -----	Pisani. C. R. 62, 690.
Pharmacosiderite -----	$\text{Fe}'''_4 (\text{OH})_3 (\text{As O}_4)_3$	2.9—3.0-----	Dana's Mineralogy.
Arseniosiderite -----	$\text{Fe}'''_4 \text{Ca}_3 (\text{O H})_9 (\text{As O}_4)_3 \cdot$	3.520 -----	Dufrenoy.
" -----	" -----	3.88 -----	Rammelsberg.
" -----	" -----	3.36 -----	Church. J. C. S. 26, 102.
Allaktite -----	$\text{Mn}_7 (\text{O H})_8 (\text{As O}_4)_2 \cdot$	3.83—3.85----	Sjögren. A. J. S. (3), 27, 494.
Rhagite -----	$\text{Bi}_5 (\text{O H})_9 (\text{As O}_4)_2 \cdot$	6.82, 22° ----	Weisbach. N. J. 1874, 302.
Mixite -----	$\text{BiCu}_{10} (\text{OH})_8 (\text{As O}_4)_5 \cdot 7 \text{H}_2 \text{O}.$	2.66 -----	Schrauf. Z. K. M. 4, 277.
" -----	" -----	3.79, 23°.5----	Hillebrand. Private communication.
Walpurgite -----	$(\text{U O}_2)_3 \text{Bi}_{10} (\text{As O}_4)_4 (\text{O H})_{24} \cdot$	5.64 -----	Weisbach. N. J. 1873, 316.

3d. Pyroarsenates and Arsenites.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Magnesium pyroarsenate -----	$\text{Mg}_2 \text{As}_2 \text{O}_7$ -----	3.7305, 15° } -----	Stallo. F. W. C.
" " -----	" -----	3.7649, 18° } -----	
Zinc pyroarsenate -----	$\text{Zn}_2 \text{As}_2 \text{O}_7$ -----	4.6989 } 21° ----	" "
" " -----	" -----	4.7034 } -----	
Manganese pyroarsenate -----	$\text{Mn}_2 \text{As}_2 \text{O}_7$ -----	3.6625, 25° } -----	" "
" " -----	" -----	3.6832 } 23° } -----	
" " -----	" -----	3.6927 } -----	
Lead arsenite -----	$\text{Pb As}_2 \text{O}_4$ -----	5.85, 23° ----	Schafarik. J. P. C. 90, 12.

XXXVI. PHOSPHATES, VANADATES, AND ARSENATES,
COMBINED WITH HALOIDS.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium fluo-phosphate*	$\text{Na}_4(\text{P O}_4)\text{F} \cdot 12\text{H}_2\text{O}$	2.2165	Briegleb. J. 8, 338.
Sodium fluo-arsenate*	$\text{Na}_4(\text{As O}_4)\text{F} \cdot 12\text{H}_2\text{O}$	2.849	Briegleb. J. 8, 339.
Wagnerite	$\text{Mg}_2(\text{P O}_4)\text{F}$	2.985	} 15° { Rammelsberg. P. A. 64, 251.
"	"	3.068	
"	"	3.12	
Artificial vanadium wagnerite.	$\text{Ca}_2(\text{V O}_4)\text{Cl}$	4.01	Pisani. Z. K. M. 3, 645.
Herderite	$\text{Ca Gl}(\text{P O}_4)\text{F}$	3.00	Hautefeuille. J. C. S. (2), 12, 131.
"	"	3.006	} Penfield and Harper. A. J. S. (3), 32, 107.
"	"	3.012	
Triplite	$(\text{Fe Mn})_2(\text{P O}_4)\text{F}$	3.617	Bergemann. J. P. C. 79, 414.
"	"	3.83—3.90	Siewert. J. 26, 1185.
Amblygonite	$\text{Al Li}(\text{P O}_4)\text{F}$	3.118	Breithaupt. J. P. C. 16, 476.
"	"	3.088	Penfield. A. J. S. (3), 18, 295.
"	"	3.046	Brush. A. J. S. (2), 34, 243.
Durangite	$\text{Al Na}(\text{As O}_4)\text{F}$	3.937	Brush. A. J. S. (3), 11, 464.
Fluorapatite	$\text{Ca}_5(\text{P O}_4)_3\text{F}$	3.166—3.235	G. Rose. P. A. 9, 185.
"	"	3.091—3.216	Pusirewski. J. 15, 763.
"	"	3.25	Church. J. C. S. 26, 101.
Chlorapatite	$\text{Ca}_5(\text{P O}_4)_3\text{Cl}$	3.054, artif.	Manross. J. 5, 10.
"	"	2.98	Daubreé. "Études synthétiques."
Pyromorphite	$\text{Pb}_5(\text{P O}_4)_3\text{Cl}$	7.008, artif.	Manross. J. 5, 10.
"	"	7.054—7.208	G. Rose. P. A. 9, 209.
"	"	7.36	Fuchs. J. 20, 1001.
Vanadinite	$\text{Pb}_5(\text{V O}_4)_3\text{Cl}$	6.707, 12°, artif.	Roscoe. Z. C. 13, 357.
"	"	6.886	Rammelsberg. J. 9, 872.
"	"	6.863	Struve. J. 12, 805.
Mimetite	$\text{Pb}_5(\text{As O}_4)_3\text{Cl}$	7.218	Rammelsberg. J. 7, 856.
"	"	7.32	Smith. J. 8, 965.
" Artificial	"	7.12	Michel. B. S. M. 10, 135.
Ekdemite	$\text{Pb}_5(\text{As O}_4)_2\text{Cl}_4$	7.14	Nordenskiöld. Z. K. M. 2, 306.
Endlichite	$\text{Pb}_5(\text{As O}_4)_3\text{Cl} + \text{Pb}_5(\text{V O}_4)_3\text{Cl}$	6.864	Genth. Am. Phil. Soc., 1885.

*Baker (J. C. S., May, 1885) assigns more complex formulæ to these salts.

XXXVII. ANTIMONITES AND ANTIMONATES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium antimonite -----	$\text{Na Sb O}_2 \cdot 3 \text{ H}_2 \text{ O}$ -----	2.864 -----	Terreil. Ann. (4), 7, 350.
Sodium hydrogen antimonite.	$\text{Na H}_2 (\text{Sb O}_2)_3$ -----	5.05 -----	" "
Romeite -----	$\text{Ca (Sb O}_2) (\text{Sb O}_3) ?$ -----	4.675 } -----	Damour. J. 6, 837.
" -----	" -----	4.714 } -----	
Atopite -----	$\text{Ca}_2 \text{ Sb}_2 \text{ O}_7$ -----	5.03 -----	Nordenskiöld. Dana's Min., 3d App.
Barcenite -----	$\text{Ca Hg (Sb O}_3)_4$ -----	5.353, 20° -----	Mallet. A. J. S. (3), 16, 306.
Monimolite -----	$\text{Pb}_4 (\text{Sb O}_4)_2 \text{ O}$ -----	5.94 -----	Igelström. Dana's Min.
Bindheimite -----	$\text{Pb}_3 (\text{Sb O}_4)_2 \cdot 4 \text{ H}_2 \text{ O}$ -----	4.60—4.76 -----	Hermann. J. P. C. 34, 179.
" -----	" -----	5.01, 19° -----	Hillebrand. Bull. 20, U. S. G. S.
Nadorite -----	$\text{Pb (Sb O}_2) \text{ Cl}$ -----	7.02 -----	Flajolot. J. 23, 1280.
Stibioferite -----	$4 \text{ Fe}''' \text{ Sb O}_4 \cdot 3 \text{ H}_2 \text{ O}$ -----	3.598 -----	Goldsmith. Dana's Min., 2d App.
Thrombolite -----	$\text{Cu}_{10} \text{ Sb}_6 \text{ O}_{19} \cdot 19 \text{ H}_2 \text{ O}$ -----	3.668 -----	Schrauf. Z. K. M. 4, 28.

XXXVIII. COLUMBATES AND TANTALATES.*

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Magnesium columbate -----	$\text{Mg}_4 \text{ Cb}_2 \text{ O}_9$ -----	4.3 -----	Joly. C. R. 81, 268.
Manganese columbate -----	?	4.94 -----	Joly. B. S. C. 25, 67.
Columbite -----	$\text{Fe Cb}_2 \text{ O}_6$ -----	5.469—5.495 -----	Schlieper. Dana's Min.
" -----	" -----	5.447 -----	Oesten. Dana's Min.
" -----	" -----	5.432—5.452 -----	Breithaupt. J. 11, 720.
" -----	" -----	5.40—5.42 -----	Müller. J. 11, 721.
Manganese columbite -----	$\text{Mn (Cb O}_3) (\text{Ta O}_3)$ -----	6.59 -----	Comstock. A. J. S. (3), 19, 131.
Tantalite -----	$\text{Fe Ta}_2 \text{ O}_6$ -----	7.264 -----	Nordenskiöld. P. A. 26, 488.
" -----	" -----	7.936 -----	Berzelius. Dana's Min.
" -----	" -----	7.703 -----	Jenzsch. Dana's Min.
" -----	" -----	7.277—7.414 -----	Rose. J. 11, 720.
" -----	" -----	7.2 -----	Smith. A. J. S. (3), 14, 323.
Mangantantalite -----	$\text{Mn Ta}_2 \text{ O}_6$ -----	7.37 -----	Arzruni. J. C. S. 54, 234.
Sipylite -----	Er Cb O_4 -----	4.883, 16° -----	Mallet. Z. K. M. 6, 518.

* For samarskite, microlite, fergusonite, and other natural columbotantalates see Dana's Mineralogy. The formulæ here assigned to columbite, tantalite, and sipylite are only approximative, representing the typical compounds.

XXXIX. CARBONATES.

1st. Simple Carbonates.

NAME.	FORMULA.	SP. GRAVITY	AUTHORITY.
Lithium carbonate-----	$\text{Li}_2 \text{C O}_3$ -----	2.111 -----	Kremers. J. 10, 67.
" "-----	"-----	1.787, fused --	Quincke. P. A. 138, 141.
Sodium carbonate-----	$\text{Na}_2 \text{C O}_3$ -----	2.4659 -----	Karsten. Schw. J. 65, 394.
" "-----	"-----	2.430 -----	Playfair and Joule. M. C. S. 2, 401.
" "-----	"-----	2.509 -----	Filhol. Ann. (3), 21, 415.
" "-----	"-----	2.407, 20°.5--	Favre and Valson. C. R. 77, 579.
" "-----	"-----	2.490 } -----	Schröder. Dm. 1873.
" "-----	"-----	2.510 } -----	
" "-----	"-----	2.041, 960° --	Braun. J. C. S. (2), 13, 31.
" "-----	"-----	2.45, fused----	Quincke. P. A. 135, 642.
" "-----	$\text{Na}_2 \text{C O}_3 \cdot 8 \text{H}_2 \text{O}$ ---	1.51 -----	Thomson. Ann. Phil. (2), 10, 442.
" "-----	$\text{Na}_2 \text{C O}_3 \cdot 10 \text{H}_2 \text{O}$ ---	1.423 -----	Haidinger. See Böttger.
" "-----	"-----	1.454, m. of 4--	Playfair and Joule. M. C. S. 2, 401.
" "-----	"-----	1.475 -----	Schiff.
" "-----	"-----	1.463 -----	Buignet. J. 14, 15.
" "-----	"-----	1.455, 15°.5--	Holker. P. M. (3), 27, 214.
" "-----	"-----	1.4402 -----	Stolba. J. P. C. 97, 503.
" "-----	"-----	1.456, 19° ----	Favre and Valson. C. R. 77, 579.
Thermonatrite -----	$\text{Na}_2 \text{C O}_3 \cdot \text{H}_2 \text{O}$ ----	1.5—1.6-----	Dana's Mineralogy.
Potassium carbonate-----	$\text{K}_2 \text{C O}_3$ -----	2.2643 -----	Karsten. Schw. J. 65, 394.
" "-----	"-----	2.103 -----	Playfair and Joule. M. C. S. 2, 401.
" "-----	"-----	2.267 -----	Filhol. Ann. (3), 21, 415.
" "-----	"-----	2.105 -----	W. C. Smith. Am. J. P. 53, 145.
" "-----	"-----	2.00, 1150° --	Braun. J. C. S. (2), 13, 31.
Silver carbonate-----	$\text{Ag}_2 \text{C O}_3$ -----	6.0766 -----	Karsten. Schw. J. 65, 394.
" "-----	"-----	6.0, 17°.5----	Kremers. P. A. 85, 43.
Thallium carbonate-----	$\text{Tl}_2 \text{C O}_3$ -----	7.06 -----	Lamy. J. 15, 186.
" "-----	"-----	7.164 -----	Lamy and Des Cloizeaux. Nature 1, 116.
Magnesium carbonate----	Mg C O_3 -----	3.037 -----	Neumann. P. A. 23, 1.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Magnesium carbonate	Mg C O_3	3.056	Mohs.
"	"	3.065	Scheerer.
"	"	3.017	Breithaupt.
"	"	3.033	Hauer.
"	"	3.017	Marchand and Scheerer. J. 3, 760.
"	"	3.007	Jenzsch. J. 6, 848.
"	"	3.076	
"	"	3.033	
"	"	3.015	Zepharovich. J. 8, 975.
"	"	3.015	Zepharovich. J. 18, 906.
"	$\text{Mg C O}_3 \cdot 3 \text{ H}_2 \text{ O}$	1.875	Beckurts. J. C. S. 42, 14.
Zinc carbonate	Zn C O_3	4.339	Smithson.
"	"	4.442	Mohs. See Böttger.
"	"	4.3765	Karsten. Schw. J. 65, 394.
"	"	4.45	Naumann.
"	"	4.42	Haidinger.
Cadmium carbonate	Cd C O_3	4.42, 17°	Herapath. P. M. 64, 321.
"	"	4.4938	Karsten. Schw. J. 65, 394.
"	"	4.258	Schröder. Dm. 1873.
Calcium carbonate	Ca C O_3	2.7000	Karsten. Schw. J. 65, 394.
" " Chalk	"	2.6946	
" " Aragonite	"	2.931	Haidinger.
" " "	"	2.927	Biot.
" " "	"	2.945	Beudant.
" " "	"	2.947	
" " "	"	2.931	Mohs.
" " "	"	2.938	Breithaupt.
" " "	"	2.995	
" " "	"	2.926	Neumann. P. A. 23, 1.
" " "	"	2.933, 0°	Kopp.
" " "	"	2.93	Nendtwich.
" " "	"	2.92	Riegel. J. 4, 819.
" " "	"	2.93	Stieren. J. 9, 882.
" " "	"	2.932	Luca. J. 11, 732.
" " Calcite	"	2.7064	Karsten. Schw. J. 65, 394.
" " "	"	2.6987	
" " "	"	2.7213	Beudant.
" " "	"	2.7234	
" " "	"	2.750	Neumann. P. A. 23, 1.
" " "	"	2.702	Hochstetter. J. 1, 1222.
" " "	"	2.72	Kopp. J. 16, 5.
" " " Artificial	"	2.71	Bourgeois. Ann. (5), 29, 493.
" " "	$\text{Ca C O}_3 \cdot 5 \text{ H}_2 \text{ O}$	1.783	Pelouze.
" " "	"	1.75	Salm-Horstmar. P. A. 35, 515.
Strontium carbonate	Sr C O_3	3.605	Mohs. See Böttger.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Strontium carbonate	Sr C O_3	3.6245	Karsten. Schw. J. 65, 394.
" "	"	3.613	v. der Marck. J. 3, 759.
" " Precip.	"	3.548	Schröder. P. A. 106, 226.
" " "	"	3.620	
Barium carbonate	Ba C O_3	4.24	Breithaupt.
" "	"	4.301	Mohs.
" "	"	4.35	Kirwan.
" "	"	4.3019	Karsten. Schw. J. 65, 394.
" "	"	4.565	Filhol. Ann. (3), 21, 415.
" " Precip.	"	4.216	Schröder. P. A. 106, 226.
" " "	"	4.235	
" " "	"	4.372	
" " Ppt. hot	"	4.1721	Schweitzer. Contrib. Lab. Univ. of Missouri, 1876.
" " "	"	4.1975	
" " Ppt. cold	"	4.1609	
" " "	"	4.2811	
Lead carbonate	Pb C O_3	6.465	Mohs. See Böttger.
" "	"	6.5	John.
" "	"	6.47	Breithaupt.
" "	"	6.4277	Karsten. See Böttger.
" "	"	6.60	Smith. J. 8, 972.
" "	"	6.510	Schröder. P. A. Ergänzt. Bd. 6, 622.
" "	"	6.517	
Manganese carbonate	Mn C O_3	3.592	Mohs. See Böttger.
" "	"	3.553	Kersten. J. P. C. 37, 163.
" "	"	3.6608	Kranz.
" "	"	3.57	Grüner. J. 3, 767.
" " Ppt.	"	3.122	Schröder. P. A. 106, 226.
" " "	"	3.129	
Iron carbonate	Fe C O_3	3.829	Mohs. See Böttger.
" "	"	3.815	Dufrenoy.
" "	"	3.872	Neumann. P. A. 23, 1.
" "	"	3.698	Breithaupt. J. P. C. 14, 445.
" "	"	3.796, 0°	Kopp.
Lanthanite	$\text{La}_2 (\text{C O}_3)_3 \cdot 8 \text{ H}_2 \text{ O}$	2.605, 20°	Genth. A. J. S. (2), 28, 425.
"	"	2.666	Blake. J. 6, 850.
Didymium carbonate	$\text{Di}_2 (\text{C O}_3)_3 \cdot 8 \text{ H}_2 \text{ O}$	2.850, } 15° {	Cleve. U. N. A. 1885.
" "	"	2.872, }	

2d. Double Carbonates.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Hydrogen sodium carbonate.	Na H C O_3 -----	2.192, m. of 2.	Playfair and Joule.
" " "	"-----	2.163-----	M. C. S. 2, 401.
" " "	"-----	2.2208, 15°	Buignet. J. 14, 15.
" " "	"-----	2.207 }	Stolba. J. P. C. 97,
" " "	"-----	2.205 }	503.
" " "	"-----	2.159-----	Schröder. Dm. 1873.
Urao-----	$\text{Na}_3 \text{H (C O}_3)_2 \cdot 2 \text{H}_2 \text{O}$	2.1473, 21°	W. C. Smith. Am.
Hydrogen potassium carbonate.	K H C O_3 -----	2.012-----	J. P. 53, 148.
" " "	"-----	2.092-----	Chatard. Private
" " "	"-----	2.180-----	communication.
" " "	"-----	2.140 }	Gmelin.
" " "	"-----	2.167 }	Playfair and Joule.
" " "	"-----	2.078-----	M. C. S. 2, 401.
Hydrogen ammonium carbonate.	Am H C O_3 -----	1.586-----	Buignet. J. 14, 15.
Sodium potassium carbonate.	K Na C O_3 -----	2.5289 }	Schröder. Dm. 1873.
" " "	"-----	2.5633 }	W. C. Smith. Am.
" " "	$\text{K Na C O}_3 \cdot 12 \text{H}_2 \text{O}$	1.6088 }	J. P. 53, 145.
" " "	"-----	1.6334 }	Playfair and Joule.
Silver potassium carbonate.	Ag K C O_3 -----	3.769-----	M. C. S. 2, 401.
Gaylussite-----	$\text{Na}_2 \text{Ca (C O}_3)_2 \cdot 5 \text{H}_2 \text{O}$	1.928-----	Stolba. J. 18, 166.
"-----	"-----	1.950-----	" "
Dolomite-----	$\text{Ca Mg (C O}_3)_2$ -----	2.914-----	Schulten. C. R. 105,
"-----	"-----	2.918-----	813.
"-----	"-----	2.89-----	Boussingault. Ann.
"-----	"-----	2.924-----	(2), 31, 270.
"-----	"-----	2.85-----	Neumann. P. A.
Hydrodolomite-----	$\text{Ca Mg}_2 (\text{C O}_3)_3 \cdot \text{H}_2 \text{O}$	2.495-----	23, 1.
"-----	"-----	2.86-----	Ott. J. 1, 1223.
Bromlite-----	$\text{Ca Ba (C O}_3)_2$ -----	3.718-----	Tschermak. J. 10,
"-----	"-----	3.76, 15°.5	695.
Barytocalcite-----	"-----	3.66-----	Senft. J. 14, 1027.
Manganocalcite-----	$\text{Ca Mn}_2 (\text{C O}_3)_3$ -----	3.037-----	Rammelsberg. Da-
Pistomesite-----	$\text{Mg Fe (C O}_3)_2$ -----	3.412-----	na's Min.
"-----	"-----	3.417-----	Hermann. J. P. C.
Mesitite-----	$\text{Mg}_2 \text{Fe (C O}_3)_3$ -----	3.349-----	47, 13.
"-----	"-----	3.363-----	Thomson.
			Johnston. P. M.
			(3), 6, 1.
			Children. Ann.
			Phil. (2), 8, 114.
			Breithaupt. P. A.
			69, 429.
			Breithaupt. P. A.
			70, 146.
			Breithaupt. P. A.
			11, 170.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ankerite -----	$\text{Ca (Mg Fe) (C O}_3)_2$ -----	3.01 -----	Luboldt. Dana's Min.
“ -----	“ -----	3.008 -----	Ettling. Dana's Min.
“ -----	“ -----	3.072 -----	Boricky. J. 22, 1245.
Dawsonite -----	$\text{Al Na (C O}_3)_2 (\text{O H})_2$ -----	2.40 -----	Harrington. Dana's Min., 2d App.

3d. Basic Carbonates.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Hydromagnesite-----	$\text{Mg}_4 (\text{C O}_3)_3 (\text{O H})_2$ -----	2.145 -----	Smith and Brush. J. 6, 851.
“ -----	“ -----	2.180 -----	
Hydrogiobertite -----	$\text{Mg}_2 \text{C O}_4 \cdot 3 \text{H}_2 \text{O}$ -----	2.149—2.174-----	Scacchi. See Z. K. M. 12, 202.
Hydrozincite-----	$\text{Zn}_3 (\text{C O}_3) (\text{O H})_4$ -----	3.252 -----	Petersen and Voit. A. C. P. 108, 48.
Zaratite -----	$\text{Ni}_3 (\text{CO}_3) (\text{OH})_4 \cdot 4 \text{H}_2 \text{O}$ -----	2.57 -----	B. Silliman, Jr. J. 1, 1225.
“ -----	“ -----	2.693 -----	
Malachite -----	$\text{Cu}_2 (\text{C O}_3) (\text{O H})_2$ -----	3.715 -----	Breithaupt. Schw. J. 68, 291.
“ -----	“ -----	3.898 -----	Breithaupt. J. P. C. 16, 475.
“ -----	“ -----	4.06 -----	Smith. J. 8, 975.
Azurite-----	$\text{Cu}_3 (\text{C O}_3)_2 (\text{O H})_2$ -----	3.88 -----	“ “
“ -----	“ -----	3.5—3.831-----	Dana's Mineralogy.
Bismutosphærite -----	$\text{Bi}_2 \text{C O}_5$ -----	7.28—7.32-----	Weisbach. J. C. S. 34, 117.
“ -----	“ -----	7.42 -----	Wells. A. J. S. (3), 34, 271.
Bismutite-----	$\text{Bi}_2 \text{H}_2 \text{C O}_6$ -----	6.86 -----	Louis. J. C. S. 54, 33.

XL. SILICATES.*

1st. Silicates Containing But One Metal.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium metasilicate -----	$\text{Na}_2 \text{Si O}_3 \cdot 8 \text{H}_2 \text{O}$ -----	1.666, 18° -----	F. W. Clarke.
Phenakite -----	$\text{Gl}_2 \text{Si O}_4$ -----	2.966 -----	Kokscharow. J. 10, 664.
" -----	" -----	2.996 -----	
" -----	" -----	2.967, 23° -----	Hillebrand. Bull. 20, U. S. G. S.
" -----	" -----	2.95 -----	Hatch. N. J. 1888, 171.
Bertrandite -----	$\text{Gl}_4 \text{H}_2 \text{Si}_2 \text{O}_9$ -----	2.593 -----	Bertrand. B. S. M. 3, 96.
" -----	" -----	2.586 -----	Damour. B. S. M. 6, 252.
" -----	" -----	2.55 -----	Scharizer. Z. K. M. 14, 41.
Enstatite -----	Mg Si O_3 -----	3.19 -----	Damour. Dana's Min.
" -----	" -----	3.10—3.13 -----	Kenngott. J. 8, 928.
" -----	" -----	3.153 -----	Bröggerand v. Rath. Z. K. M. 1, 22.
" Artificial -----	" -----	3.11 -----	Hautefeuille. J. 17, 212.
Forsterite -----	$\text{Mg}_2 \text{Si O}_4$ -----	3.243 -----	Rammelsberg. J. 13, 757.
" Boltonite -----	" -----	3.008 -----	Silliman, Jr. J. 2, 742.
" " -----	" -----	3.208 } -----	Smith. J. 7, 821.
" " -----	" -----	3.328 } -----	
Talc -----	$\text{Mg}_3 \text{H}_2 \text{Si}_4 \text{O}_{12}$ -----	2.48—2.80 -----	Scheerer. J. 4, 793.
" -----	" -----	2.682 -----	Senft. Z. G. S. 14, 167.
Serpentine -----	$\text{Mg}_3 \text{H}_4 \text{Si}_2 \text{O}_9$ -----	2.557 -----	Rammelsberg. J. 1, 1195.
" -----	" -----	2.644 -----	Delesse. J. 1, 1195.
" -----	" -----	2.57 -----	Hermann. J. 2, 764.
" -----	" -----	2.564—2.593 -----	Gilm. J. 10, 678.
" -----	" -----	2.597—2.622 -----	Hunt. J. 11, 715.

*For sp. gr. of silicates before and after fusion see v. Kobell, Bei. 6, 314.

NOTE.—As regards the natural silicates this table is far from complete. Only those compounds are included which admit of fairly definite chemical formulation, and only a few typical determinations of specific gravity are given in each case. Furthermore, the arrangement is absolutely chemical, and is in no sense dependent upon mineralogical considerations. Thus, for example, all the magnesium silicates are brought together; and so also are the numerous double silicates of aluminum and calcium, quite regardless of their classification as mineral species. Many micas, chlorites, scapolites, etc., are omitted altogether; but the omissions are not serious, for all the important data have been many times collected in the larger treatises on mineralogy, and are, therefore, easily accessible.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Willemite -----	$\text{Zn}_2 \text{SiO}_4$ -----	4.18 -----	Levy. B. J. 25, 351.
" -----	" -----	4.02 -----	Hermann. J. 2, 743.
" -----	" -----	4.11 -----	} ----- Mixer. J. 21, 1006.
" -----	" -----	4.16 -----	
" Artificial -----	" -----	4.25 -----	Gorgeu. B. S. C. 47, 146.
Calamine -----	$\text{Zn}_2 \text{SiO}_4 \cdot \text{H}_2 \text{O}$ -----	3.435 -----	Hermann. J. P. C. 33, 98.
" -----	" -----	3.43—3.49 -----	Monheim. J. 1, 1187.
" -----	" -----	3.42 -----	Schnabel. J. 11, 710.
" -----	" -----	3.36 -----	Wieser. J. 24, 1156.
" -----	" -----	3.338, 21° -----	McIrby. J. 26, 1175.
Wollastonite -----	CaSiO_3 -----	2.884 -----	Seibert. See Böttger.
" -----	" -----	2.853 -----	v. Rath. J. 24, 1145.
" -----	" -----	2.799 -----	Piquet. J. 25, 1104.
" Artificial -----	" -----	2.7 -----	Bourgeois. Ann. (5), 29, 441.
" " -----	" -----	2.88 -----	Gorgeu. Ann. (6), 4, 515.
Xonaltite -----	$4 \text{CaSiO}_3 \cdot \text{H}_2 \text{O}$ -----	2.710—2.718 -----	Rammelsberg. J. 19, 932.
Okenite -----	$\text{CaSi}_2 \text{O}_5 \cdot 2 \text{H}_2 \text{O}$ -----	2.324 -----	Schmidt. J. 18, 889.
" -----	" -----	2.28 -----	Kobell. Dana's Min.
" -----	" -----	2.362 -----	Connel. Dana's Min.
Rhodonite -----	MnSiO_3 -----	3.63 -----	Hermann. J. 2, 738.
" -----	" -----	3.63 -----	Igelström. J. 4, 768.
" -----	" -----	3.65 -----	Fino. J. 36, 1891.
" Artificial -----	" -----	3.68 -----	Gorgeu. Ann. (6), 4, 515.
Hydrorhodonite -----	$\text{MnSiO}_3 \cdot \text{H}_2 \text{O}$ -----	2.70 -----	Engström.
Penwithite -----	$\text{MnSiO}_3 \cdot 2 \text{H}_2 \text{O}$ -----	2.49 -----	Collins. Z. K. M. 5, 623.
Tephroite -----	$\text{Mn}_2 \text{SiO}_4$ -----	4.1 -----	Brush. J. 17, 837.
" -----	" -----	4.0 -----	Mixer. S. 21, 1006.
" Artificial -----	" -----	4.34 -----	Gorgeu. C. R. 98, 920.
" " -----	" -----	4.08 -----	Gorgeu. Ann. (6), 4, 515.
Friedelite -----	$\text{Mn}_4 \text{H}_4 \text{Si}_3 \text{O}_{12}$ -----	3.07 -----	Bertrand. C. R. 82, 1167.
Grunerite -----	FeSiO_3 -----	3.713 -----	Gruner. C. R. 24, 794.
Fayalite -----	$\text{Fe}_2 \text{SiO}_4$ -----	4.138 -----	Gmelin. B. J. 21, 200.
" -----	" -----	4.006 -----	Delesse. J. 7, 821.
" Artificial -----	" -----	4.4 -----	Gorgeu. Ann. (6), 4, 515.
Chrysocolla -----	$\text{CuSiO}_3 \cdot 2 \text{H}_2 \text{O}$ -----	2.0—2.238 -----	Dana's Mineralogy.
Diopase -----	$\text{CuH}_2 \text{SiO}_4$ -----	3.314 -----	} ----- Kenngott. J. 3, 732.
" -----	" -----	3.348 -----	
Kyanite -----	$\text{Al}_2 \text{O}_2 \text{SiO}_3$ -----	3.48 -----	Igelström. J. 7, 819.
" -----	" -----	3.661 -----	Erdmann. B. J. 24, 311.
" -----	" -----	3.678 -----	Jacobson. P. A. 68, 416.
Andalusite -----	$\text{Al}_3 (\text{SiO}_4)_3 (\text{AlO})_3$ -----	3.070 -----	Rowney. J. 14, 982.
" -----	" -----	3.154 -----	Erdmann. B. J. 24, 311.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Andalusite-----	$\text{Al}_3 (\text{Si O}_4)_3 (\text{Al O})_3$	3.152 -----	Kersten. J. P. C. 37, 163.
“-----	“-----	3.160 -----	Damour. Ann. d. Mines (5), 4, 53.
“-----	“-----	3.07—3.12-----	Schmid. P. A. 97, 113.
Fibrolite-----	“-----	3.18—3.21-----	Damour. J. 18, 881.
“-----	“-----	3.239 -----	Erdmann. B. J. 24, 311.
“-----	“-----	3.238 -----	Dana. Dana's Min.
“-----	“-----	3.232 -----	Brush. “ “
Dumortierite-----	$\text{Al}_2 (\text{Si O}_4)_3 (\text{Al O})_6$	3.86 -----	Damour. Z. K. M. 6, 289.
Xenolite-----	$\text{Al}_4 (\text{Si O}_4)_3$	3.58 -----	Nordenskiöld. P. A. 56, 643.
Kaolinite-----	$\text{Al}_2 \text{ O H } (\text{Si O}_4)_2 \text{ H}_3$	2.6 -----	Clark. J. 4, 786.
“-----	“-----	2.4—2.63-----	Dana's Mineralogy.
“-----	“-----	2.611 -----	Hillebrand. Bull. 20, U. S. G. S.
Pyrophyllite-----	$\text{Al H } (\text{Si O}_3)_2$	2.78—2.79-----	Sjögren. J. 2, 757.
“-----	“-----	2.81 -----	Brush. J. 11, 707.
“-----	“-----	2.804 -----	Genth. Z. K. M. 4, 384.
“-----	“-----	2.82 -----	Tyson and Allen. J. 15, 745.
“-----	“-----	2.812 -----	Genth. J. 36, 1903.
Allophane-----	$\text{Al}_2 \text{ Si O}_5 \cdot 6 \text{ H}_2 \text{ O}$	2.02 -----	Schnabel. J. 2, 756.
“-----	“-----	1.85—1.89-----	Dana's Mineralogy.
Szaboite-----	$\text{Fe}'''_2 (\text{Si O}_3)_3$	3.505 -----	Koch. Z. K. M. 3, 308.
Nontronite. Chloropal-----	$\text{Fe}'''_2 (\text{Si O}_3)_3 \cdot 5 \text{ H}_2 \text{ O}$	1.727—1.870-----	Dana's Mineralogy.
“-----	“-----	2.105 -----	Thomson. Dana's Min.
Zircon-----	Zr Si O_4	4.047 -----	Damour. J. 1, 1171.
“-----	“-----	4.595 -----	Wetherill. J. 6, 796.
“-----	“-----	4.602 -----	Hunt. J. 4, 768.
“-----	“-----	4.625 -----	
“-----	“-----	4.395 -----	Church. J. 17, 834.
“-----	“-----	4.515 -----	
“-----	“-----	4.438 -----	
“-----	“-----	4.863 -----	
“-----	“-----	4.709, 21°-----	Cross and Hillebrand. J. 36, 1839.
Cerium orthosilicate-----	$\text{Ce}_4 (\text{Si O}_4)_3$	4.9 -----	Didier. C. R. 19, 882.
Thorium metasilicate-----	$\text{Th } (\text{Si O}_3)_2$	5.56, 25°-----	Troost and Ouvrard. C. R. 105, 255.
Thorium orthosilicate-----	Th Si O_4	6.82, 16°-----	“ “
Thorite. (Orangite)-----	$2 \text{ Th Si O}_4 \cdot 3 \text{ H}_2 \text{ O} ?$	5.397 -----	Bergemann. P. A. 82, 562.
“-----	“-----	5.34 -----	Krantz. P. A. 82, 586.
“-----	“-----	5.19 -----	Damour. Ann. d. Mines (5), 1, 587.
“-----	“-----	4.888—5.205-----	Chydenius. P. A. 119, 43.
“ (Ordinary)-----	“-----	4.344—4.397-----	“ “
Eulytite-----	$\text{Bi}_4 (\text{Si O}_4)_3$	5.912—6.006-----	Dana's Mineralogy.
“-----	“-----	6.106, 17°-----	v. Rath. J. 22, 1209.

2d. Silicates Containing More Than One Metal.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Pectolite	H Na Ca ₂ (Si O ₃) ₃	2.784	Scott. J. 5, 866.
"	"	2.778—2.881	Heddle and Greg. J. 8, 952.
"	"	2.873	Clarke. Bull. 9, U. S. G. S.
Malacolite	Ca Mg (Si O ₃) ₂	3.37	Bonsdorff. Dana's Min.
"	"	3.285	Haushofer. J. 20, 984.
"	"	3.192	Doelter. Z. K. M. 4, 89.
"	"	3.273—3.275	Hunt. Dana's Min.
Tremolite	Ca Mg ₃ (Si O ₃) ₄	2.930—3.004	Rammelsberg. J. 11, 694.
"	"	2.99	Michaelson. Dana's Min.
"	"	2.996, 22°	König. Z. K. M. 1, 50.
Hedenbergite	Ca Fe (Si O ₃) ₂	3.467, 25°	Wolff. J. P. C. 34, 236.
"	"	3.492	Doelter. Z. K. M. 4, 90.
Monticellite	Ca Mg Si O ₄	3.119	Rammelsberg. J. 13, 758.
"	"	3.05	Freda. J. 36, 1876.
Knebelite	Fe Mn Si O ₄	3.714, 18°.5	Doebereiner. Schw. J. 21, 49.
"	"	4.122	Erdmann. Dana's Min.
Kentrolite	Mn''' ₂ Pb ₂ Si ₂ O ₉	6.19	v. Rath. Z. K. M. 5, 35.
Melanotekite	Fe''' ₂ Pb ₂ Si ₂ O ₉	5.73	Lindström. Z. K. M. 6, 515.
Hyalotekite	Ca Ba Pb Si ₆ O ₁₅ ?	3.81	Nordenskiöld.
Petalite	Al Li (Si ₂ O ₅) ₂	2.447—2.455	Rammelsberg. J. 5, 858.
"	"	2.412—2.553	Damour. Dana's Min.
" (Castorite)	"	2.382—2.401	Breithaupt. P. A. 69, 438.
Spodumene	Al Li (Si O ₃) ₂	3.170	Mohs. See Böttger.
"	"	3.1327—3.137	Rammelsberg. J. 5, 857.
"	"	3.16	Pisani. Z. K. M. 2, 109.
" Hiddenite	"	3.177	Genth. Z. K. M. 6, 522.
Eucryptite	Al ₃ Li ₃ (Si O ₄) ₃	2.647	} Brush and Dana. A. J. S. (3), 20, 266.
"	"	2.667	
Aluminum lithium silicate	Al ₂ Li ₂ Si ₅ O ₁₄	2.40, 12°	Hautefeuille. C. R. 90, 541.
" " "	Al Li Si ₃ O ₈	2.41, 11°	" "
Albite	Al Na Si ₃ O ₈	2.612	Eggertz. Dana's Min.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Albite	$\text{Al Na Si}_3 \text{O}_8$	2.609, 12°	Streng. J. 24, 1151.
"	"	2.59	Leeds. J. 26, 1166.
"	"	2.604	Genth. J. 36, 1896.
"	"	2.618	Baerwald. J. 36, 1897.
"	"	2.601	Lacroix. Z. K. M. 14, 112.
" Artificial	"	2.61	Hautefeuille. Z. K. M. 2, 107.
Jadeite	$\text{Al Na (Si O}_3)_2$	3.26—3.36	Damour. B. S. M. 4, 157.
"	"	3.33	Damour. Z. K. M. 6, 290.
"	"	3.326—3.355	Hallock. { Unpub- lished data from U. S. National Museum. Hawes. { Taylor. {
"	"	3.26—3.34	
"	"	3.35	
Nephelite	$\text{Al}_8 \text{Na}_8 \text{Si}_9 \text{O}_{34}$	2.56—2.617	Scheerer. P. A. 49, 359.
"	"	2.629	Kimball. J. 13, 762.
"	"	2.600—2.6087	Rammelsberg. Z. G. S. 29, 78.
"	"	2.60—2.63	Lorenzen. J. 36, 1884.
Analcite	$\text{Al Na H}_2 \text{Si}_2 \text{O}_7$	2.262—2.288	Waltershausen. J. 11, 711.
"	"	2.236	Waltershausen. J. 6, 820.
"	"	2.278	Thomson. Dana's Min.
"	"	2.222	Bamberger. Z. K. M. 6, 33.
Eudnophite	"	2.27	Weibye. J. 3, 735.
Paragonite	$\text{Al}_3 \text{Na H}_2 (\text{Si O}_4)_3$	2.779	Schafhäutl. Dana's Min.
" Pregrattite	"	2.895	Oellacher. Dana's Min.
" Cossnite	"	2.890—2.896	Gastaldi. Dana's Min., 2d App.
Hydronephelite	$\text{Al}_3 \text{Na}_2 \text{H (Si O}_4)_3 \cdot 3 \text{H}_2 \text{O}$	2.263	Diller. A. J. S. (3), 31, 267.
Natrolite	$\text{Al}_2 \text{Na}_2 \text{H}_4 (\text{Si O}_4)_3$	2.207, 11°	Gmelin. J. 3, 733.
"	"	2.254—2.258	Kenngott. J. 6, 820.
"	"	2.249	Brush. A. J. S. (2), 31, 365.
Orthoclase	$\text{Al K Si}_3 \text{O}_8$	2.5702	Breithaupt. See Böttger.
"	"	2.573	Rammelsberg. J. 20, 988.
"	"	2.576—2.586	v. Rath. J. 24, 1150.
"	"	2.572—2.595	Genth. J. 36, 1896.
" Artificial	"	2.55, 16°	Hautefeuille. Z. K. M. 2, 514.
Leucite	$\text{Al K (Si O}_3)_2$	2.519	Bischof. Dana's Min.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Leucite -----	$\text{Al K (Si O}_3)_2$ -----	2.48 -----	Rammelsberg. J. 9, 852.
“ -----	“ -----	2.479, 23° -----	v. Rath. J. 27, 1255.
“ Artificial -----	“ -----	2.47, 13° -----	Hautefeuille. Z. K. M. 5, 411.
Muscovite -----	$\text{Al}_3 \text{ K H}_2 (\text{Si O}_4)_3$ -----	2.817 -----	Kussin. Dana's Min.
“ -----	“ -----	2.714—2.796 -----	Grailich. Dana's Min.
“ -----	“ -----	2.830—2.831 -----	Tschermak. Z. K. M. 3, 127.
“ -----	“ -----	2.855 -----	Scharizer. Z. K. M. 12, 15.
Pollucite -----	$\text{Al}_2 \text{ Cs}_2 \text{ H}_2 (\text{Si O}_3)_5$ -----	2.868—2.892 -----	Breithaupt. P. A. 69, 439.
“ -----	“ -----	2.901 -----	Pisani. J. 17, 850.
“ -----	“ -----	2.893 -----	Rammelsberg. Z. K. M. 6, 286.
Grossularite -----	$\text{Al}_2 \text{ Ca}_3 (\text{Si O}_4)_3$ -----	3.522—3.536 -----	Hunt. Dana's Min.
“ -----	“ -----	3.609 -----	Websky. J. 22, 1214.
“ -----	“ -----	3.572 -----	Jannasch. J. 36, 1880.
Anorthite -----	$\text{Al}_2 \text{ Ca (Si O}_4)_2$ -----	2.763 -----	Rose. See Böttger.
“ -----	“ -----	2.73 -----	Deville. J. 7, 832.
“ -----	“ -----	2.7325 -----	Potyka. J. 12, 785.
“ -----	“ -----	2.668 -----	Silliman. Dana's Min.
“ -----	“ -----	2.686 -----	v. Rath. J. 27, 1255.
Idocrase -----	$\text{Al}_4 \text{ Ca}_8 (\text{Si O}_4)_7$? -----	3.3123—3.3905 -----	Karsten. See Böttger.
“ -----	“ -----	3.384 -----	Rammelsberg. J. 2, 745.
“ -----	“ -----	3.44 -----	Damour. J. 24, 1153.
“ -----	“ -----	3.2533 -----	Korn. J. 36, 1874.
“ -----	“ -----	3.403—3.472 -----	Jannasch. J. 36, 1875.
Melilite -----	$\text{Al}_2 \text{ Ca}_6 \text{ Si}_5 \text{ O}_{19}$ -----	2.9—3.104 -----	Dana's Mineralogy.
“ -----	“ -----	2.95 -----	Damour. Ann. (3), 10, 59.
Meionite* -----	$\text{Al}_6 \text{ Ca}_4 \text{ Si}_6 \text{ O}_{25}$ -----	2.734—2.737 -----	v. Rath. P. A. 90, 87.
“ -----	“ -----	2.716, 16° -----	Neminar. J. 28, 1227.
Gehlenite -----	$\text{Al}_2 \text{ Ca}_3 \text{ Si}_2 \text{ O}_{10}$ -----	2.9—3.067 -----	Dana's Mineralogy.
“ -----	“ -----	2.997 -----	Janovsky. J. 26, 1170.
Prehnite -----	$\text{Al}_2 \text{ Ca}_2 \text{ H}_2 (\text{Si O}_4)_3$ -----	2.926 -----	Mohs. See Böttger.
“ -----	“ -----	2.845—2.897, 4° -----	Streng. N. J. 1870, 314.
“ -----	“ -----	3.042 -----	Genth. J. 36, 1185.
Heulandite -----	$\text{Al}_2 \text{ Ca H}_{10} \text{ Si}_6 \text{ O}_{21}$ -----	2.195 -----	Thomson. Dana's Min.
“ -----	“ -----	2.1963 -----	Jeremejew. Z. K. M. 2, 503.
Stilbite -----	$\text{Al}_2 \text{ Ca H}_{12} \text{ Si}_6 \text{ O}_{22}$ -----	2.203 -----	Münster. P. A. 65, 297.

*For other data relative to the scapolite group see Dana's Mineralogy and also Tschermak's memoir in M. C. 4, 884.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Stilbite	$\text{Al}_2 \text{Ca H}_{12} \text{Si}_6 \text{O}_{22}$	2.134	Waltershausen. Dana's Min.
"	"	2.16	Schmid. J. 24, 1158.
Laumontite	$\text{Al}_2 \text{Ca H}_8 \text{Si}_4 \text{O}_{16}$	2.268	Breithaupt. See Böttger.
"	"	2.252	Mallet. Dana's Min.
"	"	2.280—2.310	Gericke. J. 9, 861.
Scolezite	$\text{Al}_2 \text{Ca}_2 \text{H}_6 \text{Si}_3 \text{O}_{13}$	2.393	Waltershausen. J. 6, 819.
"	"	2.28	Collier. Dana's Min.
"	"	2.27	Lüdecke. Z. K. M. 6, 312.
Chabazite	$\text{Al}_2 \text{Ca H}_{12} \text{Si}_4 \text{O}_{18}$	2.094	Breithaupt. See Böttger
"	"	2.08—2.19	Dana's Mineralogy.
"	"	2.133	Streng. Z. K. M. 1, 519.
"	"	2.115	
Zoisite	$\text{Al}_3 \text{Ca}_2 \text{H Si}_3 \text{O}_{13}$	3.251—3.361	Rammelsberg. J. 9, 849.
"	"	3.226—3.381	Breithaupt. Dana's Min.
Margarite	$\text{Al}_4 \text{Ca H}_2 \text{Si}_2 \text{O}_{12}$	2.99	Hermann. J. P. C. 53, 16.
Oligoclase	$\text{Al}_5 \text{Ca Na}_3 \text{Si}_{11} \text{O}_{32}$	2.66—2.68	Kerndt. J. 1, 1182.
"	"	2.725	v. Rath. J. 11, 706.
"	"	2.643—2.689	Petersen. J. 25, 1112.
Andesite	$\text{Al}_3 \text{Ca Na Si}_5 \text{O}_{16}$	2.651—2.736	Delesse. J. 1, 1183.
"	"	2.667—2.674	Hunt. J. 14, 995.
Labradorite	$\text{Al}_7 \text{Ca}_3 \text{Na Si}_9 \text{O}_{32}$	2.719—2.883	Delesse. J. 1, 1183.
"	"	2.709	Damour. J. 3, 723.
"	"	2.697	Hunt. J. 4, 782.
"	"	2.72—2.77, 15°	Streng. J. 15, 736.
Faujasite	$\text{Al}_4 \text{CaNa}_2 \text{H}_4 (\text{SiO}_3)_{10} \cdot 18 \text{H}_2 \text{O}$	1.923	Damour. Ann. d. Mines (4), 1, 395.
Thomsonite	$2 \text{Al}_2 (\text{Ca Na}_2) \text{Si}_2 \text{O}_8 \cdot 5 \text{H}_2 \text{O}$	2.35—2.38	Zippe. Dana's Min.
"	"	2.357	Rammelsberg. J. P. C. 59, 348.
" Lintonite	"	2.32—2.37	Peckham and Hall. A. J. S. (3), 19, 122.
Gmelinite	$\text{Al}_2 (\text{Ca Na}_2) \text{H}_{12} \text{Si}_4 \text{O}_{18}$	2.07	Damour. J. 12, 796.
"	"	2.099—2.169	Dana's Mineralogy.
"	"	2.100	Liversidge. J. 36, 1895.
Milarite	$\text{Al}_2 \text{Ca}_2 \text{K H} (\text{Si}_2 \text{O}_5)_6$	2.5529	Ludwig. Z. K. M. 2, 631.
Phillipsite	$\text{Al}_2 (\text{Ca K}_2) \text{H}_8 \text{Si}_4 \text{O}_{16}$	2.201	Waltershausen. Dana's Min.
"	"	2.213	Marignac. B. J. 26, 351.
"	"	2.150, 21°	W. Fresenius. Z. K. M. 3, 42.
"	"	2.160, 20°	
Strontium oligoclase	$\text{Al}_5 \text{Sr Na}_3 \text{Si}_{11} \text{O}_{32}$	2.619	Fouqué and Lévy. C. R. 90, 622.
Strontium labradorite	$\text{Al}_7 \text{Sr}_3 \text{Na Si}_9 \text{O}_{32}$	2.862	" "
Strontium anorthite	$\text{Al}_2 \text{Sr} (\text{Si O}_4)_2$	3.043	" "

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Barium oligoclase -----	$\text{Al}_5 \text{Ba Na}_3 \text{Si}_{11} \text{O}_{32}$ ----	2.906 -----	Fouqué and Lévy. C. R. 90, 622.
Barium labradorite -----	$\text{Al}_7 \text{Ba}_3 \text{Na Si}_9 \text{O}_{32}$ ----	3.333 -----	" "
Barium anorthite -----	$\text{Al}_2 \text{Ba} (\text{Si O}_4)_2$ ----	3.573 -----	" "
Harmotome -----	$\text{Al}_2 \text{Ba H}_{10} \text{Si}_5 \text{O}_{19}$ ----	2.392 -----	Mohs. See Böttger.
" -----	" -----	2.44—2.45 -----	Dana's Mineralogy.
" -----	" -----	2.447 -----	Damour. Dana's Min.
" -----	" -----	2.402, 21° -----	W. Fresenius. Z. K. M. 3, 42.
Lead oligoclase -----	$\text{Al}_5 \text{Pb Na}_3 \text{Si}_{11} \text{O}_{32}$ ----	3.196 -----	Fouqué and Lévy. C. R. 90, 622.
Lead labradorite -----	$\text{Al}_7 \text{Pb}_3 \text{Na Si}_9 \text{O}_{32}$ ----	3.609 -----	" "
Lead anorthite -----	$\text{Al}_2 \text{Pb} (\text{Si O}_4)_2$ ----	4.093 -----	" "
Euclase -----	Al Gl H Si O_5 -----	3.036 -----	Mallet. J. 6, 800.
" -----	" -----	3.097 -----	Des Cloizeaux. Da- na's Min.
" -----	" -----	3.096—3.103 -----	Kokscharow. Da- na's Min.
" -----	" -----	3.087 -----	Guyot. Z. K. M. 5, 250.
Beryl -----	$\text{Al}_2 \text{Gl}_3 (\text{Si O}_3)_6$ or	2.813 -----	Mallet. J. 7, 828.
" -----	$\text{Al}_4 \text{Gl}_5 \text{H}_2 \text{Si}_{11} \text{O}_{34}$	2.686 -----	Haughton. J. 15, 720.
" -----	" -----	2.650 -----	Petersen. J. 19, 925.
" -----	" -----	2.706 -----	Penfield and Har- per. A. J. S. (3), 32, 111.
" -----	" -----	2.681—2.725 -----	Kokscharow. Dana's Min.
" Emerald -----	" -----	2.614 -----	Boussingault. J. 22, 1216.
" " -----	" -----	2.710—2.759 -----	Kammerer. Dana's Min.
Iolite -----	$\text{Al}_4 \text{Mg}_2 \text{Si}_5 \text{O}_{18}$ ----	2.605 -----	Kokscharow. J. 13, 767.
" -----	" -----	2.6699, 16° -----	Schachtel. Z. K. M. 7, 594.
" -----	" -----	2.6708, 18° -----	Jost. Z. K. M. 7, 594.
Ripidolite -----	$\text{Al}_2 \text{Mg}_5 \text{Si}_3 \text{O}_{14} \cdot 4 \text{H}_2 \text{O}$	2.774 -----	Rose. Dana's Min.
" -----	" -----	2.603 -----	Hermann. Dana's Min.
" -----	" -----	2.673 -----	Marignac. Dana's Min.
" -----	" -----	2.714 -----	Blake. Dana's Min.
Arctolite -----	$\text{Al}_2 \text{Mg Ca H}_2 (\text{Si O}_4)_3$	3.03 -----	Blomstrand.
Manganese garnet. Arti- ficial.	$\text{Al}_2 \text{Mn}_3 (\text{Si O}_4)_3$ ----	4.05, 11° -----	Gorgeu. C. R. 97, 1303.
Karpholite -----	$\text{Al}_2 \text{Mn H}_4 \text{Si}_2 \text{O}_{10}$ ----	2.935 -----	Breithaupt. Dana's Min.
" -----	" -----	2.876 -----	Koninck. Z. K. M. 4, 222.
Almandite -----	$\text{Al}_2 \text{Fe}''_3 (\text{Si O}_4)_3$ ----	3.90—4.236 -----	Wachtmeister. Da- na's Min.
" -----	" -----	4.196 -----	Mallet. Dana's Min.
" -----	" -----	4.197 -----	Websky. J. 21, 1013.
" -----	" -----	4.127 -----	Heddle. J. 36, 1881.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Partschinite -----	$\text{Al}_2 \text{Fe}'' \text{Mn}_2 (\text{Si O}_4)_3$	4.006 -----	Haidinger. J. 7, 826.
Venasquite -----	$\text{Al}_2 \text{Fe}'' \text{H}_2 \text{Si}_3 \text{O}_{11}$	3.26 -----	Damour. Z. K. M. 4, 413.
Chloritoid -----	$\text{Al}_2 \text{Fe}'' \text{H}_2 \text{Si O}_7$	3.52 -----	Smith. J. 3, 741.
" -----	" -----	3.513 -----	Hunt. J. 14, 1011.
" -----	" -----	3.538 -----	Tschermak and Si-pöcz. Z. K. M. 3, 508.
Ouvarovite -----	$\text{Cr}_2 \text{Ca}_3 (\text{Si O}_4)_3$	3.5145 -----	Erdmann. B. J. 23, 291.
" -----	" -----	3.41—3.52 -----	Dana's Mineralogy.
Acmite -----	$\text{Fe}''' \text{Na} (\text{Si O}_3)_2$	3.536—3.543 -----	Breithaupt. See Böttger.
" -----	" -----	3.530 -----	Rammelsberg. J. 11, 695.
" -----	" -----	3.520 -----	Doelter. Z. K. M. 4, 92.
Andradite -----	$\text{Fe}'''_2 \text{Ca}_3 (\text{Si O}_4)_3$	3.85 -----	Damour. J. 9, 848.
" -----	" -----	3.796—3.798 -----	Kokscharow. J. 12, 782.
" -----	" -----	3.797 -----	Fellenberg. J. 20, 984.
" -----	" -----	3.740 -----	Dana. Z. K. M. 2, 311.
" Demantoid -----	" -----	3.828 -----	Rammelsberg. Z. K. M. 3, 103.
" -----	" -----	3.81, 15° -----	Cossa. Z. K. M. 5, 602.
Crocidolite -----	$\text{Fe}'''_2 \text{Fe}''_3 \text{Na}_2 \text{H}_4 (\text{Si O}_3)_9$	3.200 -----	Stromeyer and Hausmann. P. A. 23, 153.
" -----	" -----	3.2 -----	Chester. A. J. S. (3), 34, 108.
Lievrite -----	$\text{Fe}''' \text{Fe}''_2 \text{Ca H Si}_2 \text{O}_9$	3.711 -----	Tobler. J. 9, 851.
" -----	" -----	4.023 -----	Städeler. J. 19, 934.
" -----	" -----	4.05 -----	Lorenzen. J. 36, 1879.
Thuringite. (Owenite) -----	$\text{Fe}'''_4 \text{Fe}''_4 \text{Si}_3 \text{O}_{16} \cdot 5 \text{H}_2 \text{O}$	3.197, 20° -----	Genth. A. J. S. (2), 16, 167.
" " -----	" -----	3.191 -----	Smith. A. J. S. (2), 18, 376.
" -----	" -----	3.177 -----	Zepharovich. Z. K. M. 1, 371.
Sphene -----	Ca Ti Si O_5	3.49—3.51 -----	Hunt. J. 6, 837.
" -----	" -----	3.44 -----	Fuchs. Dana's Min.
" -----	" -----	3.535 -----	Rose. " "
" Greenovite -----	" -----	3.547 -----	Hintze. Z. K. M. 2, 310.
" Artificial -----	" -----	3.45 -----	Hautefeuille. J. 17, 216.
Guarinite -----	" -----	3.487 -----	Guiscardi. J. 11, 718.
Zirconium potassium silicate. -----	$\text{Zr K}_2 \text{Si}_2 \text{O}_7$	2.79 -----	Mellis. Göttingen Doct. Diss., 1870.
Zirconium sodium silicate -----	$\text{Zr}_8 \text{Na}_2 \text{Si O}_{19} \cdot 11 \text{H}_2 \text{O}$	3.53 -----	" "
Calcium tin silicate -----	Ca Sn Si O_5	4.34 -----	Bourgeois. C. R. 104, 233.

3d. Boro-, Fluo-, and Other Mixed Silicates.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Danburite -----	$\text{Ca B}_2 \text{Si}_2 \text{O}_8$ -----	2.986 -----	Brush and Dana. Z. K. M. 5, 185.
" -----	" -----	3.021 -----	
" -----	" -----	2.986 -----	
" -----	" -----	2.988 -----	
Datolite -----	Ca H B Si O_5 -----	2.989 -----	Mohs. See Böttger.
" -----	" -----	2.9911 -----	Breithaupt. See Böttger.
" -----	" -----	2.983 -----	Whitney. J. 12, 801.
" -----	" -----	2.987—3.014 -----	Tschermak. J. 13, 778.
" -----	" -----	2.988 -----	Smith. J. 27, 1270.
Homilite -----	$\text{Ca}_2 \text{Fe B}_2 \text{Si}_2 \text{O}_{10}$ -----	3.28 -----	Paikull. Z. K. M. 1, 385.
Howlite -----	$\text{Ca}_2 \text{H}_5 \text{B}_5 \text{Si O}_{14}$ -----	2.59 -----	Penfield and Sperry. A. J. S. (3), 34, 221.
Axinite -----	$\text{Al}_3 (\text{Ca Fe Mn})_4 \text{H}_2 \text{B Si}_5 \text{O}_{21}$ -----	3.271 -----	Mohs. See Böttger.
Tourmaline. Colorless -----	$\text{Al B O}_2 (\text{Si O}_4)_2 \text{R}'_6$ -----	3.07—3.085 -----	Riggs. A. J. S. (3), 35, 35.
" Red -----	" -----	2.998—3.082 -----	Rammelsberg. J. 3, 744.
" " -----	" -----	2.997—3.028 -----	Riggs. A. J. S. (3), 35, 35.
" Green -----	" -----	3.069—3.112 -----	Rammelsberg. J. 3, 744.
" Brown -----	" -----	3.035—3.068 -----	" "
" Black -----	" -----	3.205—3.243 -----	" "
" " -----	" -----	3.08—3.20 -----	Riggs. A. J. S. (3), 35, 35.
Apophyllite -----	$\text{Ca}_4 \text{K H}_8 (\text{Si O}_3)_8 \text{F}_4 \text{H}_2 \text{O}$ -----	2.335 -----	Mohs. See Böttger.
" -----	" -----	2.305 -----	Jackson. J. 3, 733.
" -----	" -----	2.37 -----	Smith. J. 7, 838.
Leucophane -----	$\text{Gl}_4 \text{Ca}_4 \text{Na}_3 \text{Si}_7 \text{O}_{22} \text{F}_3$ -----	2.964 -----	Rammelsberg. J. 9, 867.
" -----	" -----	2.974 -----	Erdmann. B. J. 21, 168.
Melinophane -----	$\text{Gl}_3 \text{Ca}_3 \text{Na}_{12} \text{Si}_4 \text{O}_{14} \text{F}_{12}$ -----	3.00 -----	Scheerer. J. 5, 883.
" -----	" -----	3.018 -----	Rammelsberg. J. 9, 867.
Topaz -----	$\text{Al}_2 \text{Si O}_4 \text{F}_2$ -----	3.439—3.547 -----	Breithaupt. See Böttger.
" -----	" -----	3.52—3.56 -----	Kokscharow. J. 9, 867.
" -----	" -----	3.514—3.563 -----	Rammelsberg. J. P. C. 96, 7.
" -----	" -----	3.533—3.597 -----	Church. Geol. Mag. (2), 2, 320.
" -----	" -----	3.578, 22° -----	Hillebrand. Bull. 20, U. S. G. S.
Lepidolite -----	$\text{Al}_2 \text{K Li Si}_3 \text{O}_9 \text{F}_2$ -----	2.834—2.8546 -----	Berwerth. Z. K. M. 2, 523.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Lepidolite -----	$\text{Al}_2 \text{K Li Si}_3 \text{O}_9 \text{F}_2$ ----	2.838 -----	Scharizer. Z. K. M. 12, 15.
Phlogopite -----	$\text{Al}_2 \text{Mg}_5 \text{HK Si}_5 \text{O}_{18} \text{F}_2$ ----	2.78—2.85-----	Dana's Mineralogy.
" -----	" -----	2.81 -----	Kenngott. J. 15, 742.
" -----	" -----	2.959, 16° -----	Berwerth. Z. K. M. 2, 521.
" -----	" -----	2.742—2.867--	Tschermak. Z. K. M. 3, 127.
Calcium chlorosilicate-----	$\text{Ca}_3 \text{Si O}_4 \text{Cl}_2$ -----	2.77 -----	Le Chatelier. C. R. 97, 1510.
Sodalite -----	$\text{Al}_4 \text{Na}_5 (\text{Si O}_4)_4 \text{Cl}$ ----	2.401 -----	v. Rath. Dana's Min.
" -----	" -----	2.31 -----	Lorenzen. J. 36, 1884.
" -----	" -----	2.3405, 21° -----	Bamberger. Z. K. M. 5, 584.
" -----	" -----	2.294—2.314--	Kimball. J. 13, 775.
Mariulite -----	$\text{Al}_3 \text{Na}_4 \text{Si}_9 \text{O}_{24} \text{Cl}$ ----	2.626, 19° -----	v. Rath. Z. G. S. 18, 635.
Pyrosmalite-----	$\text{Mn}_5 \text{Fe}''_5 \text{H}_{14} (\text{Si O}_4)_8 \text{Cl}_2$ ----	3.168—3.174--	Lang. J. P. C. 83, 424.
" -----	" -----	3.081 -----	Hisinger. Dana's Min.
Helvite -----	$\text{Gl}_3 \text{Mn}_4 (\text{Si O}_4)_3 \text{S}$ ----	4.306 -----	Lewis. Z. K. M. 7, 425.
" -----	" -----	3.23—3.37-----	Kokscharow. J. 22, 1228.
Danalite -----	$\text{Gl}_3 \text{Fe}_3 \text{Zn} (\text{Si O}_4)_3 \text{S}$ ----	3.427 -----	Cooke. A. J. S. (2), 42, 73.
Nosean -----	$\text{Al}_4 \text{Na}_6 (\text{Si O}_4)_4 \text{S O}_4$ ----	2.25—2.4-----	Dana's Mineralogy.
" -----	" -----	2.279—2.399--	v. Rath. Z. G. S. 16, 86.
Complex silicate and sulphide.	$\text{Ca}_{18} \text{Al}_2 \text{S}_2 \text{O}_{35} \cdot 2 \text{Ca S}$	3.054 -----	Rammelsberg. J. P. C. (2), 35, 98.
Thaumasite -----	$\text{Ca}_3 \text{Si O}_3 \text{S O}_4 \text{C O}_3 \cdot 14 \text{H}_2 \text{O}$ ----	1.877, 19° -----	Lindström. J. 33, 1484.
Calcium silicophosphate--	$\text{Ca}_5 \text{Si O}_4 (\text{P O}_4)_2$ ----	3.042 -----	Carnot and Richard. B. S. M. 6, 241.

XLI. TITANATES AND STANNATES.

NAME.	FORMULA.	SP. GRAVITY	AUTHORITY.
Calcium titanate. Artifi-	Ca Ti O_3 -----	4.10 -----	Ebelmen.
cial. " "-----	" -----	4.00 -----	Hautefeuille. J. 17, 217.
" " Perof-	" -----	4.017 -----	Rose. B. J. 20, 210.
" " skite.	" -----	4.038 -----	Damour. J. 8, 960.
" " "-----	" -----	3.974, 20° -----	Brun. Z. K. M. 7, 389.
Strontium titanate-----	$\text{Sr}_2 \text{Ti}_3 \text{O}_8$ -----	5.1 -----	Bourgeois. C. R. 103, 141.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Barium titanate -----	$\text{Ba}_2 \text{Ti}_3 \text{O}_8$ -----	5.91 -----	Bourgeois. C. R. 103, 141.
Magnesium titanate -----	Mg Ti O_3 -----	3.91 -----	Hautefeuille. J. 17, 217.
Magnesium orthotitanate -----	$\text{Mg}_2 \text{Ti O}_4$ -----	3.52 -----	" "
Ilmenite -----	Fe Ti O_3 -----	4.727 -----	Marignac. B. J. 26, 372.
Iron orthotitanate -----	$\text{Fe}_2 \text{Ti O}_4$ -----	4.37 -----	Hautefeuille. J. 17, 217.
Zinc titanate -----	$\text{Zn Ti}_3 \text{O}_7$ -----	4.92, 15° -----	Levy. C. R. 105, 380.
Potassium stannate -----	$\text{K}_2 \text{Sn O}_3. 3 \text{H}_2 \text{O}$ ----	3.197 -----	Ordway. J. 18, 240.

XLII. CYANOGEN COMPOUNDS.*

1st. General Division.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Cyanogen. Liquefied -----	$\text{C}_2 \text{N}_2$ -----	.866, 17°.2-----	Faraday. P.T. 1845, 155.
Hydrocyanic acid -----	H C N -----	.7058, 7° -----	Gay Lussac. Ann. 95, 136. Trautwein. Cooper. P. A. 47, 527.
" " -----	"-----	.6969, 18° -----	
" " -----	"-----	.710, 6° -----	
" " -----	"-----	.706, 2°.8-----	
Cyanic acid -----	H C N O -----	1.1558, —20° }-----	Troost and Hautefeuille. J. 21, 314.
" " -----	"-----	1.140, 0° -----	
Cyanuric acid -----	$\text{H}_3 \text{C}_3 \text{N}_3 \text{O}_3$ -----	1.768, 0° -----	Troost and Hautefeuille. J. 22, 99.
" " -----	"-----	2.500, 19° -----	
" " -----	"-----	2.228, 24° -----	
" " -----	"-----	1.725, 48° -----	
" " -----	"-----	1.722 -----	Schröder. Ber. 13, 1070.
" " -----	"-----	1.735 -----	
Cyamelide -----	$(\text{H C N O})_n$ -----	1.974, 0° -----	Troost and Hautefeuille. J. 22, 99.
" -----	"-----	1.774, 24° -----	
Hydrosulphocyanic acid -----	H C N S -----	1.0013, 10° -----	Clasen.
" " -----	"-----	1.022 -----	Porrett. P.T. 1814, 548.
" " -----	"-----	1.0082 -----	Meitzendorff. P. A. 56, 63.
Tricyanogen trichloride --	$\text{C}_3 \text{N}_3 \text{Cl}_3$ -----	1.32 -----	Serullas. Ann. (2), 38, 370.
Cyanogen iodide -----	C N I -----	1.85 -----	Weltzien's "Zusammenstellung."

* Exclusive of organic cyanides, or compounds containing organic radicles.

2d. Cyanides, Cyanates, and Sulphocyanides.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Potassium cyanide	$K\ C\ N$	1.52, 12°	Bödeker. B. D. Z.
Silver cyanide	$Ag\ C\ N$	3.943, 11°	Giesecke. "
Mercury cyanide	$Hg\ (C\ N)_2$	3.77, 13°	Bödeker. "
" "	"	4.0036, 14°.2	Clarke. A. J. S. (3), 16, 201.
" "	"	4.0262, 12°	Creighton. F. W. C.
" "	"	4.0026, 22°.2	Wittmann. "
" "	"	3.990	Schröder. Ber. 13, 1070.
" "	"	4.011	
Mercury oxycyanide	$Hg\ O.\ Hg\ (C\ N)_2$	4.419 } 23°.2	Clarke. A. J. S. (3), 16, 201.
" "	"	4.428 }	
" "	"	4.437, 19°.2	Creighton. F. W. C.
Mercury chlorocyanide	$Hg\ Cl\ (C\ N)$	4.514, 26°	Wittmann. "
" "	"	4.531, 21°.7	
Mercury potassium cyanide.	$K_2\ Hg\ (C\ N)_4$	2.4470, 21°.2	Creighton. "
" "	"	2.4551, 24°	
" "	"	2.4620, 21°.5	
Potassium chromocyanide	$K_4\ Cr\ (C\ N)_6$	1.71	Moissan. Ann. (6), 4, 138.
Potassium manganicyanide.	$K_3\ Mn\ (C\ N)_6$	1.821	Topsoë. B. S. C. 19, 246.
Sodium ferrocyanide	$Na_4\ Fe\ (C\ N)_6.\ 12\ H_2\ O$	1.458	Bunsen.
Potassium ferrocyanide	$K_4\ Fe\ (C\ N)_6.\ 3\ H_2\ O$	1.83	Watts' Dictionary.
" "	"	1.86	Schiff. J. 12, 41.
" "	"	2.052	Buignet. J. 14, 15.
Thallium ferrocyanide	$Tl_4\ Fe\ (C\ N)_6.\ 2\ H_2\ O$	4.641	Lamy and Des Cloizeaux. Nature 1, 142.
Ammonium ferrocyanide with ammonium chloride.	$Am_4\ Fe\ (C\ N)_6.\ 2\ Am\ Cl.\ 3\ H_2\ O.$	1.490	Topsoë. C. C. 4, 76.
Potassium ferricyanide	$K_3\ Fe\ Cy_6$	1.8004	Schabus. J. 3, 359.
" "	"	1.845	Wallace. J. 7, 378.
" "	"	1.849	Schiff. J. 12, 41.
" "	"	1.817	Buignet. J. 14, 15.
" "	"	1.849, 15°.3	Schröder. Dm. 1873.
" "	"	1.854, 15°.3	
" "	"	1.855, 15°	
" "	"	1.861, 15°	
Silver ammonio-ferricyanide.	$4\ Ag\ Fe\ (C\ N)_6.\ 6\ N\ H_3.\ H_2\ O.$	2.42 } 14°.2	Gintl. J. 22, 321.
" "	"	2.47 }	
Sodium nitroprusside	$Na_4\ Fe_2\ (C\ N)_{10}.\ (NO)_2.\ 4\ H_2\ O.$	1.710 }	Schröder. Dm. 1873.
" "	"	1.716 }	
" "	"	1.6869, 25°	Dudley. F. W. C.
" "	"	1.713 }	Schröder. Ber. 13, 1070.
" "	"	1.731 }	
Potassium nickel cyanide	$K_2\ Ni\ (C\ N)_4.\ H_2\ O$	1.871, 14°.5	Dudley. F. W. C.
" "	"	1.875, 11	
Potassium cobalticyanide	$K_3\ Co\ (C\ N)_6$	1.906, 11°	Bödeker. B. D. Z.
" "	"	1.913	Topsoë. C. C. 4, 76.
Potassium platino-cyanide	$K_2\ Pt\ (C\ N)_4.\ 3\ H_2\ O$	2.4548, 16°	Dudley. F. W. C.
" "	"	2.5241, 13°	
Barium platino-cyanide	$BaPt\ (C\ N)_4$	3.054	Schabus. J. 3, 360.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Samarium platinoeyanide	$\text{Sm}_2\text{Pt}_3(\text{CN})_{12} \cdot 18\text{H}_2\text{O}$	2.743	Cleve. U. N. A. 1885. Topsoë. B. S. C. 21, 118.
" " "	" "	2.745	
Thorium platinoeyanide	$\text{ThPt}_2(\text{CN})_8 \cdot 16\text{H}_2\text{O}$	2.460	
Potassium cyanate	K C N O	2.0475, 16°	Mendius. B. D. Z. Schröder. Ber. 12, 561.
" " "	" "	2.056, 4°	
Silver cyanate	Ag C N O	4.004, 16°	Mendius. B. D. Z. Schröder. Ber. 13, 1070.
" " "	" "	3.998	
Potassium sulphocyanide	K C N S	1.866	Bödeker. B. D. Z. Schröder. Ber. 11, 2215.
" " "	" "	1.906	
" " "	" "	1.891	
Ammonium sulphocyanide	Am C N S	1.299	Dudley. F. W. C. Schröder. Ber. 11, 2215.
" " "	" "	1.316	
" " "	" "	1.316	
Lead sulphocyanide	Pb (C N S)_2	3.82	Schabus. J. 3, 362.
Phosphorus sulphocyanide	P (C N S)_3	1.625, 18°	Miquel. J. C. S. 32, 872.
Potassium chromium sulphocyanide	$\text{K}_6\text{Cr(CNS)}_{12} \cdot 8\text{H}_2\text{O}$	1.7051, 17°.5	Dudley. F. W. C.
" " "	" "	1.7107, 16°	
Potassium platinsulphocyanide	$\text{K}_2\text{Pt (C N S)}_6$	2.342, 18°	
" " "	" "	2.370, 19°	" "
Potassium platinoseleniocyanide	$\text{K}_2\text{Pt (C N Se)}_6$	3.377, 10°.2	" "
" " "	" "	3.378, 12°.5	
Titanium nitroeyanide	$\text{Ti (C N)}_2 \cdot 3\text{Ti}_3\text{N}_2$	5.30	Wollaston. P. T. 1823, 17.
" " "	" "	5.28001	Karsten. Schw. J. 65, 394.
Samarium sulphocyanide with mercuric cyanide	$\text{Sm (C N S)}_3 \cdot 3\text{Hg (CN)}_2 \cdot 12\text{H}_2\text{O}$	2.742, 18° 2.749, 18°.4	Cleve. U. N. A. 1885.

XLIII. MISCELLANEOUS INORGANIC COMPOUNDS.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Nitrogen chlorophosphide	$\text{P}_3\text{N}_3\text{Cl}_3$	1.98	Gladstone and Holmes. J. 17, 148.
Mercury sulphide with copper chloride	Hg S. Cu Cl_2	6.29	Raschig. A. C. P. 228, 27.
Mercury chloride with ammonium dichromate	$\text{Hg Cl}_2 \cdot \text{Am}_2\text{Cr}_2\text{O}_7$	3.1850, 18°	Heighway. F. W. C. Langenbeck. F. W. C. H. Schmidt. F. W. C.
" " "	" "	3.2336, 21°	
" " "	" "	3.0824, 14°	
Mercury cyanide with potassium chromate	$2\text{Hg Cy}_2 \cdot \text{K}_2\text{CrO}_4$	3.564, 21°.8	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Potassium nitrate-sulphate.	$K_2 S O_4 \cdot H N O_3$	2.38	Jacquelain. A. C. P. 32, 234.
Potassium phosphato-sulphate.	$K_2 S O_4 \cdot H_3 P O_4$	2.296	" "
Hanksite	$4 Na_2 S O_4 \cdot Na_2 C O_3$	2.562	Hidden. A. J. S. (3), 30, 135.
Phosgenite	$Pb_2 C O_3 Cl_2$	6.305	Rammelsberg. P. A. 85, 141.
Leadhillite	$Pb_4 S O_4 (C O_3)_3$	6.550	Gadolin. J. 6, 846.
"	"	6.526	Kokscharow. J. 6, 846.
Bastnäs site (Hamartite)	$(Ce La Di) (C O_3) F$	4.93	Nordenskiöld. J. 22, 1246.
"	"	5.18—5.20	Allen and Comstock. A. J. S. (3), 19, 390.
Parisite	$(Ce La Di)_2 (C O_3)_4 \cdot Ca F_2$	4.35	Bunsen. Dana's Min.
"	"	4.317	Dufrenoy. Dana's Min.

XLIV. ALLOYS.*

ALLOY.	SPECIFIC GRAVITY.	AUTHORITY.
SODIUM AND POTASSIUM.		
Na K -----	.8993	Hagen. P. A. (2), 19, 436.
" -----	.8994	
" -----	.8905, 4°.5, fluid	
ZINC AND CALCIUM.†		
Zn ₁₂ Ca -----	6.369	v. Rath. Z. C. 12, 665.
" -----	6.3726	
ALLOYS OF MERCURY. AMALGAMS.		
Hg Zn -----	11.304	Calvert and Johnson. J. 12, 120.
Hg ₅ Cd ₂ -----	12.615	Croockewitt. J. 1, 393.
Hg Pb -----	11.93	" "
" -----	12.284, 15°.7	Matthiessen. P. T. 1860, 177.
Hg Pb ₂ -----	11.979, 15°.9	" "
Hg ₃ Pb ₂ -----	12.49, 17°	Bauer. J. 24, 317.
Hg ₂ Pb -----	12.815, 15°.5	Matthiessen. P. T. 1860, 177.
Hg ₂ Sn -----	11.3816	Kupffer. Ann. (2), 40, 285.
" -----	11.456, 11°.3	Holzmann. P. T. 1860, 177.

* This table contains only a moderate number of the many determinations which have been made relative to the specific gravity of alloys. Only those alloys have been admitted which allow of relatively simple chemical formulæ. Some of them are doubtless true chemical compounds, but in most cases the formulæ merely represent proportionate composition.

† See also Norton and Twitchell, A. C. J. 10, 70.

ALLOY.	SPECIFIC GRAVITY.	AUTHORITY.
ALLOYS OF MERCURY. AMALGAMS—continued.		
Hg Sn -----	10.3447 -----	Kupffer. Ann. (2), 40, 285.
“ -----	10.369, 14°.2 -----	Holzmann. P. T. 1860, 177.
“ -----	10.255 -----	Calvert and Johnson. J. 12, 120.
Hg Sn ₂ -----	9.3185 -----	Kupffer. Ann. (2), 40, 285.
“ -----	9.362, 9°.9 -----	Holzmann. P. T. 1860, 177.
“ -----	9.314 -----	Calvert and Johnson. J. 12, 120.
Hg Sn ₃ -----	8.8218 -----	Kupffer. Ann. (2), 40, 285.
“ -----	8.805 -----	Calvert and Johnson. J. 12, 120.
Hg Sn ₄ -----	8.510 -----	“ “
Hg Sn ₅ -----	8.312 -----	“ “
Hg Sn ₆ -----	8.151 -----	“ “
Hg Bi -----	11.208 -----	“ “
Hg Bi ₂ -----	10.693 -----	“ “
“ -----	10.45 -----	Croockewitt. J. 1, 393.
Hg Bi ₃ -----	10.474 -----	Calvert and Johnson. J. 12, 120.
Hg Bi ₄ -----	10.350 -----	“ “
Hg Bi ₅ -----	10.240 -----	“ “
Hg ₅ Ag ₁₂ . Native -----	12.703, 17° -----	Weiss. J. 36, 1819.
Hg ₂ Au -----	15.412 -----	Croockewitt. J. 1, 393.
ALLOYS OF ALUMINUM.		
Al Zn -----	4.532 -----	Hirzel. J. 11, 138.
Al ₆ Sn -----	3.583 -----	“ “
Al ₅ Sn -----	3.791 -----	“ “
Al ₄ Sn -----	4.025 -----	“ “
Al ₃ Sn -----	4.276 -----	“ “
Al ₂ Sn -----	4.744 -----	“ “
Al Sn -----	5.454 -----	“ “
Al Sn ₂ -----	6.264 -----	“ “
Al Sn ₃ -----	6.536 -----	“ “
Al ₃ Cb -----	4.45—4.52 -----	Marignac. J. 21, 215.
Al ₃ Ta -----	7.02 -----	Marignac. J. 21, 212.
Al Cr -----	4.9 -----	Wöhler. J. 11, 160.
Al ₄ W -----	5.58 -----	Michel. J. 13, 130.
Al ₃ Mn -----	3.402 -----	Michel. J. 13, 131.
Al ₆ Ni -----	3.647 -----	Michel. J. 13, 132.
Al ₄₄ Cu -----	2.764 -----	Hirzel. J. 11, 138.
Al ₆ Cu -----	3.206 -----	“ “
Al ₅ Cu -----	3.316 -----	“ “
Al ₁₁ Cu ₃ -----	3.579 -----	“ “
Al ₇ Cu ₂ -----	3.724 -----	“ “
Al ₃ Cu -----	3.972 -----	“ “
Al ₉ Cu ₄ -----	4.148 -----	“ “
Al ₂ Cu -----	4.355 -----	“ “
Al Cu -----	5.731 -----	“ “
Al Cu ₂ -----	6.946 -----	“ “
Al Cu ₃ -----	7.204 -----	“ “
Al Cu ₄ -----	7.534 -----	“ “
Al Cu ₅ -----	7.727 -----	“ “
Al Cu ₆ -----	7.751 -----	“ “
Al ₂ Cu ₁₃ -----	7.884 -----	“ “
Al ₂ Ag -----	6.733 -----	Hirzel. J. 11, 137.
Al Ag -----	8.744 -----	“ “
Al Ag ₂ -----	9.376 -----	“ “

ALLOY.	SPECIFIC GRAVITY.	AUTHORITY.
TIN AND ZINC.		
Sn ₂ Zn	7.235	Croockewitt. J. 1, 394.
"	7.274	Calvert and Johnson. J. 12, 120.
Sn Zn	7.115	Croockewitt. J. 1, 394.
"	7.262	Calvert and Johnson. J. 12, 120.
Sn Zn ₂	7.096	Croockewitt. J. 1, 394.
"	7.188	Calvert and Johnson. J. 12, 120.
Sn Zn ₃	7.180	" "
Sn Zn ₄	7.155	" "
Sn Zn ₅	7.140	" "
Sn Zn ₁₀	7.135	" "
TIN AND CADMIUM.		
Sn ₆ Cd	7.434, 12° 7'	Matthiessen. P. T. 1860, 177.
Sn ₄ Cd	7.489, 15°	" "
Sn ₂ Cd	7.690, 12° 9'	" "
Sn Cd	7.904, 13° 2'	" "
Sn Cd ₂	8.139, 11° 1'	" "
Sn Cd ₄	8.336, 14° 5'	" "
Sn Cd ₆	8.432, 15°	" "
TIN AND LEAD.		
Sn ₁₂ Pb	7.628, 19° 4'	Vicentini and Omodei. Bei. 12, 178. Melting point, 181°.
"	7.4849, 181° s.	
"	7.3513, 212° 1'	
"	7.3209, 218° 7'	
"	7.3041, 249° 4'	
"	7.2726, 275° 3'	
"	7.2490, 304° 2'	
"	7.2294, 329°	
"	7.2088, 354° 8'	Kupffer. Ann. (2), 40, 285.
Sn ₆ Pb	7.9210	
"	7.927, 15° 2'	Long. P. T. 1860, 177.
Sn ₅ Pb	8.0279	Kupffer. Ann. (2), 40, 285.
"	8.093	Calvert and Johnson. J. 12, 120.
"	8.046	Riche. J. 15, 111.
Sn ₄ Pb	8.1730	Kupffer. Ann. (2), 40, 285.
"	7.850	Thomson. J. 1, 1040.
"	8.188, 16°	Long. P. T. 1860, 177.
"	8.196	Calvert and Johnson. J. 12, 120.
"	8.2347	Pillichody. J. 14, 279.
"	8.195	Riche. J. 15, 111.
"	8.177, 16° 7'	Vicentini and Omodei. Bei. 12, 178. Melting point, 183° 3'.
"	8.0735, 183° 3' s.	
"	7.8393, 209° 1'	
"	7.8090, 240° 4'	
"	7.7917, 260° 4'	
"	7.7586, 295° 5'	
"	7.7323, 324° 7'	
"	7.7032, 357° 6'	
Sn ₇ Pb ₂	8.291	Riche. J. 15, 111.
Sn ₃ Pb	8.3914	Kupffer. Ann. (2), 40, 285.
"	8.549	Thomson. J. 1, 1040.
"	9.025	Croockewitt. J. 1, 394.
"	8.418	Calvert and Johnson. J. 12, 120.

ALLOY.	SPECIFIC GRAVITY.	AUTHORITY.
TIN AND LEAD—contin'd.		
Sn ₃ Pb	8.4087	Pillichody. J. 14, 279.
"	8.414	Riche. J. 15, 111.
"	8.400, 17°	Vicentini and Omodei. Bei. 12, 178. Melting point, 182°.
"	8.2949, 182°.	
"	8.0821, 182°.	
"	8.0755, 189°.	
"	8.0431, 222°.	
"	8.0150, 250°	
"	7.9896, 275°.	
"	7.9695, 296°.	
"	7.9446, 323°.	
"	7.9212, 349°.	
Sn ₅ Pb ₂	8.565	Riche. J. 15, 111.
Sn ₂ Pb	8.7454	Kupffer. Ann. (2), 40, 285.
"	8.777, 13°.	Regnault. P. A. 53, 67.
"	8.688	Thomson. J. 1, 1040.
"	8.779, 17°.	Long. P. T. 1860, 177.
"	8.774	Calvert and Johnson. J. 12, 120.
"	8.7257	Pillichody. J. 14, 279.
"	8.766	Riche. J. 15, 111.
"	8.745, 15°.	Vicentini and Omodei. Bei. 12, 178. Melting point, 182°.
"	8.6298, 182°.	
"	8.4509, 182°.	
"	8.4381, 189°	
"	8.4038, 207°	
"	8.3532, 242°.	
"	8.3204, 272°.	
"	8.2920, 303°.	
"	8.2688, 325°.	
"	8.2448, 351°.	
Sn ₃ Pb ₂	9.0377	Pillichody. J. 14, 279.
"	9.046	Riche. J. 15, 111.
Sn ₇ Pb ₅	9.2773, 15°	Pohl. J. 3, 324.
Sn Pb	9.4263	Kupffer. Ann. (2), 40, 285.
"	9.387, 13°.	Regnault. P. A. 53, 67.
"	9.288	Thomson. J. 1, 1040.
"	9.394	Croockewitt. J. 1, 394.
"	9.460, 15°.	Long. P. T. 1860, 177.
"	9.458	Calvert and Johnson. J. 12, 120.
"	9.4330	Pillichody. J. 14, 279.
"	9.451	Riche. J. 15, 111.
"	9.422, 20°	Vicentini and Omodei. Bei. 12, 178. Melting point, 181°.
"	9.2809, 181°.	
"	9.180, 181°.	
"	9.1348, 201°.	
"	9.0953, 216°.	
"	9.0438, 233°	
"	8.9864, 248°.	
"	8.9643, 262°.	
"	8.9276, 293°	
"	8.8989, 317°	
"	8.8771, 337°	
"	8.8590, 356°	
Sn ₃ Pb ₄	9.6399, 15°	Pohl. J. 3, 323.
Sn ₂ Pb ₃	9.7971	Pillichody. J. 14, 279.
Sn Pb ₂	10.0782	Kupffer. Ann. (2), 40, 285.

ALLOY.	SPECIFIC GRAVITY.	AUTHORITY.
TIN AND LEAD—contin'd.		
Sn Pb ₂ -----	9.966 -----	Croockewitt. J. 1, 394.
" -----	10.080, 14°.8 -----	Long. P. T. 1860, 177.
" -----	10.105 -----	Calvert and Johnson. J. 12, 120.
" -----	10.0520 -----	Pillichody. J. 14, 279.
" -----	10.110 -----	Riche. J. 15, 111.
Sn Pb ₃ -----	10.3868 -----	Kupffer. Ann. (2), 40, 285.
" -----	10.421 -----	Calvert and Johnson. J. 12, 120.
" -----	10.3311 -----	Pillichody. J. 14, 279.
" -----	10.419 -----	Riche. J. 15, 111.
Sn Pb ₄ -----	10.5551 -----	Kupffer. Ann. (2), 40 285.
" -----	10.590, 14°.3 -----	Long. P. T. 1860, 177.
" -----	10.587 -----	Calvert and Johnson. J. 12, 120.
" -----	10.5957 -----	Pillichody. J. 14, 279.
Sn Pb ₅ -----	10.751 -----	Calvert and Johnson. J. 12, 120.
Sn Pb ₆ -----	10.815, 15°.6 -----	Long. P. T. 1860, 177.
LEAD AND CADMIUM.		
Cd ₆ Pb -----	9.160, 13°.7 -----	Holzmann. P. T. 1860, 177.
Cd ₄ Pb -----	9.353, 12° -----	" "
Cd ₂ Pb -----	9.755, 14°.7 -----	" "
Cd Pb -----	10.246, 11°.7 -----	" "
Cd Pb ₂ -----	10.656, 13°.4 -----	" "
Cd Pb ₄ -----	10.950, 9°.2 -----	" "
Cd Pb ₆ -----	11.044, 14°.8 -----	" "
ANTIMONY AND TIN.		
Sb ₁₂ Sn -----	6.739, 16°.2 -----	Long. P. T. 1860, 177.
Sb ₈ Sn -----	6.747, 13°.4 -----	" "
Sb ₄ Sn -----	6.781, 13°.5 -----	" "
Sb ₂ Sn -----	6.844, 13°.8 -----	" "
Sb Sn -----	6.929, 15°.8 -----	" "
Sb Sn ₂ -----	7.023, 15°.8 -----	" "
Sb Sn ₃ -----	7.100, 10°.6 -----	" "
Sb Sn ₅ -----	7.140, 19° -----	" "
Sb Sn ₁₀ -----	7.208, 18°.5 -----	" "
Sb Sn ₂₀ -----	7.276, 19°.4 -----	" "
Sb Sn ₅₀ -----	7.279, 20° -----	" "
Sb Sn ₁₀₀ -----	7.284, 20°.2 -----	" "
ANTIMONY AND LEAD.		
Sb ₈ Pb -----	7.214 -----	Riche. J. 15, 111.
Sb ₆ Pb -----	7.361 -----	" "
Sb ₅ Pb -----	7.432 -----	Calvert and Johnson. J. 12, 120.
Sb ₄ Pb -----	7.525 -----	" "
" -----	7.622 -----	Riche. J. 15, 111.
Sb ₃ Pb -----	7.830 -----	Calvert and Johnson. J. 12, 120.
Sb ₂ Pb -----	8.330 -----	" "
" -----	8.201, 13°.7 -----	Matthiessen. P. T. 1860, 177.
" -----	8.233 -----	Riche. J. 15, 111.
Sb Pb -----	8.953 -----	Calvert and Johnson. J. 12, 120
" -----	8.989, 11°.7 -----	Matthiessen. P. T. 1860, 177.
" -----	8.999 -----	Riche. J. 15, 111.
Sb ₂ Pb ₃ -----	9.502 -----	" "

ALLOY.	SPECIFIC GRAVITY.	AUTHORITY.
ANTIMONY AND LEAD— continued.		
Sb Pb ₂ -----	9.723 -----	Calvert and Johnson. J. 12, 120.
“-----	9.811, 14° 3'-----	Matthiessen. P. T. 1860, 177.
“-----	9.817 -----	Riche. J. 15, 111.
Sb ₂ Pb ₅ -----	10.040 -----	“ “
Sb Pb ₃ -----	10.136 -----	Calvert and Johnson. J. 12, 120.
“-----	10.144, 15° 4'-----	Matthiessen. P. T. 1860, 177.
“-----	10.211 -----	Riche. J. 15, 111.
Sb ₂ Pb ₇ -----	10.344 -----	“ “
Sb Pb ₄ -----	10.387 -----	Calvert and Johnson. J. 12, 120.
“-----	10.455 -----	Riche. J. 15, 111.
Sb ₂ Pb ₉ -----	10.541 -----	“ “
Sb Pb ₅ -----	10.556 -----	Calvert and Johnson. J. 12, 120.
“-----	10.586, 19° 3'-----	Matthiessen. P. T. 1860, 177.
“-----	10.615 -----	Riche. J. 15, 111.
Sb ₂ Pb ₁₁ -----	10.673 -----	“ “
Sb Pb ₆ -----	10.722 -----	“ “
Sb ₂ Pb ₁₃ -----	10.764 -----	“ “
Sb Pb ₇ -----	10.802 -----	“ “
Sb Pb ₁₀ -----	10.930, 19° 9'-----	Matthiessen. P. T. 1860, 177.
Sb Pb ₂₅ -----	11.194, 20° 5'-----	“ “
BISMUTH AND ZINC.		
Bi Zn -----	9.046 -----	Calvert and Johnson. J. 12, 120
BISMUTH AND CADMIUM.		
Bi ₁₂ Cd -----	9.766, 15° 4'-----	Matthiessen. P. T. 1860, 177.
Bi ₈ Cd -----	9.737, 14° 7'-----	“ “
Bi ₄ Cd -----	9.669, 14° 8'-----	“ “
Bi ₂ Cd -----	9.554, 13° 4'-----	“ “
Bi Cd -----	9.388, 15° -----	“ “
Bi Cd ₂ -----	9.195, 15° 5'-----	“ “
Bi Cd ₃ -----	9.079, 13° 1'-----	“ “
BISMUTH AND TIN.		
Bi ₄₀₀ Sn-----	9.815, 18° 1'-----	Carty. P. T. 1860, 177.
Bi ₁₈₀ Sn-----	9.814, 19° 5'-----	“ “
Bi ₁₂₀ Sn-----	9.811, 19° -----	“ “
Bi ₈₈ Sn -----	9.803, 22° 8'-----	“ “
Bi ₆₀ Sn -----	9.774, 23° -----	“ “
Bi ₂₀ Sn -----	9.737, 19° 8'-----	“ “
Bi ₁₂ Sn -----	9.675, 15° 2'-----	“ “
Bi ₈ Sn -----	9.614, 12° 7'-----	“ “
Bi ₄ Sn -----	9.435, 15° -----	“ “
“-----	9.434 -----	Riche. J. 15, 112.
Bi ₂ Sn -----	9.178, 15° 9'-----	Carty. P. T. 1860, 177.
“-----	9.145 -----	Riche. J. 15, 111.
Bi Sn -----	8.759 -----	Regnault. P. A. 53, 67.
“-----	8.772, 12° 6'-----	Carty. P. T. 1860, 177.
“-----	8.754 -----	Riche. J. 15, 112.
Bi ₂ Sn ₃ -----	8.506 -----	“ “
Bi Sn ₂ -----	8.085 -----	Regnault. P. A. 53, 67.
“-----	8.339, 13° 9'-----	Carty. P. T. 1860, 177.

ALLOY.	SPECIFIC GRAVITY.	AUTHORITY.
BISMUTH AND TIN— continued.		
Bi Sn ₂ -----	8.327-----	Riche. J. 15, 112.
Bi ₂ Sn ₅ -----	8.199-----	" "
Bi Sn ₃ -----	8.112, 14°.2-----	Carty. P. T. 1860, 177.
"-----	8.097-----	Riche. J. 15, 112.
Bi ₂ Sn ₇ -----	8.017-----	" "
Bi Sn ₄ -----	7.943, 20°-----	Carty. P. T. 1860, 177.
Bi Sn ₂₂ -----	7.438, 19°.9-----	" "
BISMUTH AND LEAD.		
Bi ₆₀ Pb-----	9.844, 21°.7-----	Carty. P. T. 1860, 177.
Bi ₄₈ Pb-----	9.845, 21°.6-----	" "
Bi ₄₀ Pb-----	9.850, 21°.3-----	" "
Bi ₂₄ Pb-----	9.887, 20°.6-----	" "
Bi ₂₀ Pb-----	9.893, 19°.5-----	" "
Bi ₁₆ Pb-----	9.934, 21°.1-----	" "
Bi ₁₂ Pb-----	9.973, 15°-----	" "
Bi ₈ Pb-----	10.048, 10°.7-----	" "
"-----	8.6-----	E. Wiedemann. P. A. (2), 20, 240.
Bi ₄ Pb-----	10.235, 12°.5-----	Carty. P. T. 1860, 177.
"-----	10.232-----	Riche. J. 15, 111.
"-----	9.73-----	E. Wiedemann. P. A. (2), 20, 239.
Bi ₂ Pb-----	10.538, 14°-----	Carty. P. T. 1860, 177.
"-----	10.519-----	Riche. J. 15, 111.
"-----	10.96-----	E. Wiedemann. P. A. (2), 20, 239.
Bi Pb-----	10.956, 14°.9-----	Carty. P. T. 1860, 177.
"-----	10.931-----	Riche. J. 15, 111.
"-----	11.03-----	E. Wiedemann. P. A. (2), 20, 237.
Bi ₄ Pb ₅ -----	11.038-----	Riche. J. 15, 111.
Bi ₂ Pb ₃ -----	11.108-----	" "
Bi ₄ Pb ₇ -----	11.166-----	" "
Bi Pb ₂ -----	11.141, 12°.7-----	Carty. P. T. 1860, 177.
"-----	11.194-----	Riche. J. 15, 111.
"-----	11.4-----	E. Wiedemann. P. A. (2), 20, 236.
Bi ₂ Pb ₅ -----	11.209-----	Riche. J. 15, 111.
Bi Pb ₃ -----	11.161, 14°.8-----	Carty. P. T. 1860, 177.
"-----	11.225-----	Riche. J. 15, 111.
Bi ₂ Pb ₇ -----	11.235-----	" "
Bi Pb ₄ -----	11.188, 20°.8-----	Carty. P. T. 1860, 177.
Bi Pb ₅ -----	11.196, 20°.2-----	" "
Bi Pb ₁₂ -----	11.280, 22°.5-----	" "
Bi Pb ₅₀ -----	11.331, 23°-----	" "
BISMUTH AND ANTIMONY.		
Bi ₆ Sb-----	9.435, 9°.4-----	Holzmann. P. T. 1860, 177.
Bi ₅ Sb-----	9.369-----	Calvert and Johnson. J. 12, 120.
Bi ₄ Sb-----	9.276-----	" "
"-----	9.277, 12°.1-----	Holzmann. P. T. 1860, 177.
Bi ₃ Sb-----	9.095-----	Calvert and Johnson. J. 12, 120.
Bi ₂ Sb-----	8.859-----	" "
"-----	8.886, 14°-----	Holzmann. P. T. 1860, 177.
Bi Sb-----	8.364-----	Calvert and Johnson. J. 12, 120.
"-----	8.392, 11°-----	Holzmann. P. T. 1860, 177.
Bi Sb ₂ -----	7.829-----	Calvert and Johnson. J. 12, 120.

ALLOY.	SPECIFIC GRAVITY.	AUTHORITY.
BISMUTH AND ANTIMONY —continued.		
Bi Sb ₂ -----	7.864, 9°.4 -----	Holzmann. P. T. 1860, 177.
Bi Sb ₃ -----	7.561 -----	Calvert and Johnson. J. 12, 120.
Bi Sb ₄ -----	7.370 -----	“ “
Bi Sb ₅ -----	7.271 -----	“ “
IRON AND TIN.		
Fe Sn ₅ . Cryst. furnace product.	7.534 -----	Rammelsberg.
Fe Sn ₂ -----	7.446 -----	Noellner. J. 13, 188.
Fe ₃ Sn -----	8.733 -----	Lassaigne.
IRON AND NICKEL.		
Awaruite. Ni ₂ Fe -----	8.1 -----	Ulrich. N. J. 1888, 209.
COPPER AND ZINC.*		
Cu ₁₀ Zn -----	8.605 -----	Mallet. D. J. 85, 378.
Cu ₉ Zn -----	8.607 -----	“ “
Cu ₈ Zn -----	8.633 -----	“ “
Cu ₇ Zn -----	8.587 -----	“ “
Cu ₆ Zn -----	8.591 -----	“ “
Cu ₅ Zn -----	8.415 -----	“ “
“ -----	8.673 -----	Calvert and Johnson. J. 12, 120.
Cu ₄ Zn -----	8.448 -----	Mallet. D. J. 85, 378.
“ -----	8.650 -----	Calvert and Johnson. J. 12, 120.
Cu ₃ Zn -----	8.397 -----	Mallet. D. J. 85, 378.
“ -----	8.576 -----	Calvert and Johnson. J. 12, 120.
Cu ₂ Zn -----	8.299 -----	Mallet. D. J. 85, 378.
“ -----	8.392 -----	Croockewitt. J. 1, 394.
“ -----	8.488 -----	Calvert and Johnson. J. 12, 120.
Cu ₃ Zn ₂ -----	8.224 -----	Croockewitt. J. 1, 394.
Cu Zn -----	8.230 -----	Mallet. D. J. 85, 378.
“ -----	7.808 -----	Calvert and Johnson. J. 12, 120.
Cu ₃ Zn ₅ -----	7.939 -----	Croockewitt. J. 1, 394.
Cu Zn ₂ -----	8.283 -----	Mallet. D. J. 85, 378.
“ -----	7.859 -----	Calvert and Johnson. J. 12, 120.
Cu ₈ Zn ₁₇ -----	7.721 -----	Mallet. D. J. 85, 378.
Cu ₈ Zn ₁₈ -----	7.836 -----	“ “
Cu ₈ Zn ₁₉ -----	8.019 -----	“ “
Cu ₈ Zn ₂₀ -----	7.603 -----	“ “
Cu ₈ Zn ₂₁ -----	8.058 -----	“ “
Cu ₈ Zn ₂₂ -----	7.882 -----	“ “
Cu ₈ Zn ₂₃ -----	7.443 -----	“ “
Cu Zn ₃ -----	7.449 -----	“ “
“ -----	7.736 -----	Calvert and Johnson. J. 12, 120.
Cu Zn ₄ -----	7.371 -----	Mallet. D. J. 85, 378.
“ -----	7.445 -----	Calvert and Johnson. J. 12, 120.
Cu Zn ₅ -----	6.605 -----	Mallet. D. J. 85, 378.
“ -----	7.442 -----	Calvert and Johnson. J. 12, 120.

* See also the Report of the (U. S.) Board on Testing Iron, Steel, and other Metals. Washington, Government Printing Office, 1881.

ALLOY.	SPECIFIC GRAVITY.	AUTHORITY.
COPPER AND TIN.		
Cu ₉₆ Sn	8.564	Thurston's Report, 295.
Cu ₄₈ Sn	8.649	" " "
Cu ₂₅ Sn	8.820	Calvert and Johnson. J. 12, 120.
Cu ₂₄ Sn	8.694	Thurston's Report, 295.
Cu ₂₀ Sn	8.793	Calvert and Johnson. J. 12, 120.
Cu ₁₅ Sn	8.825	" "
"	8.84	Riche. J. 21, 270.
"	8.80	Riche. J. 23, 1100.
Cu ₁₂ Sn	8.681	Thurston's Report, 295.
Cu ₁₀ Sn	8.561	Mallet. D. J. 85, 378.
"	8.832	Calvert and Johnson. J. 12, 120.
"	8.87	Riche. J. 21, 270.
"	8.83	Riche. J. 23, 1100.
Cu ₉ Sn	8.462	Mallet. D. J. 85, 378.
Cu ₈ Sn	8.459	" "
"	8.84	Riche. J. 21, 270.
"	8.86	Riche. J. 23, 1100.
Cu ₇ Sn	8.728	Mallet. D. J. 85, 378.
"	8.72	Riche. J. 21, 270.
"	8.90	Riche. J. 23, 1100.
Cu ₆ Sn	8.750	Mallet. D. J. 85, 378.
"	8.65	Riche. J. 21, 270.
"	8.91	Riche. J. 23, 1100.
"	8.565	Thurston's Report, 295.
Cu ₅ Sn	8.575	Mallet. D. J. 85, 378.
"	8.965	Calvert and Johnson. J. 12, 120.
"	8.62	Riche. J. 21, 270.
"	8.87	Riche. J. 23, 1100.
Cu ₄ Sn	8.400	Mallet. D. J. 85, 378.
"	8.948	Calvert and Johnson. J. 12, 120.
"	8.77	Riche. J. 21, 270.
"	8.80	Riche. J. 23, 1100.
"	8.938	Thurston's Report, 295.
Cu ₃ Sn	8.539	Mallet. D. J. 85, 378.
"	8.954	Calvert and Johnson. J. 12, 120.
"	8.91	Riche. J. 21, 270.
"	8.96	Riche. J. 23, 1100.
"	8.970	Thurston's Report, 295.
Cu ₁₂ Sn ₅	8.682	" " "
Cu ₂ Sn	8.416	Mallet. D. J. 85, 378.
"	8.512	Croockewitt. J. 1, 394.
"	8.533	Calvert and Johnson. J. 12, 120.
"	8.15	Riche. J. 21, 270.
"	8.57	Riche. J. 23, 1100.
"	8.560	Thurston's Report, 295.
Cu ₁₂ Sn ₇	8.442	" " "
Cu ₃ Sn ₂	8.06	Riche. J. 21, 270.
"	8.30	Riche. J. 23, 1100.
"	8.312	Thurston's Report, 295.
Cu ₄ Sn ₃	8.302	" " "
Cu ₆ Sn ₅	8.182	" " "
Cu Sn	8.656	Mallet. D. J. 85, 378.
"	8.072	Croockewitt. J. 1, 394.
"	7.992	Calvert and Johnson. J. 12, 120.
"	7.90	Riche. J. 21, 270.
"	8.12	Riche. J. 23, 1100.

ALLOY.	SPECIFIC GRAVITY.	AUTHORITY.
COPPER AND TIN—continued.		
Cu Sn -----	8.013 -----	Thurston's Report, 295.
Cu ₃ Sn ₄ -----	7.948 -----	" " "
Cu ₃ Sn ₅ -----	7.835 -----	" " "
Cu Sn ₂ -----	7.387 -----	Mallet. D. J. 85, 378.
" Cryst. -----	7.53 -----	Miller. P. A. 120, 55.
" -----	7.738 -----	Calvert and Johnson. J. 12, 120.
" -----	7.83 -----	Riche. J. 21, 270.
" -----	7.74 -----	Riche. J. 23, 1100.
" -----	7.770 -----	Thurston's Report, 295.
Cu ₃ Sn ₇ . Furnace product. -----	6.994 -----	Rammelsberg. P. A. 120, 54.
Cu ₂ Sn ₅ -----	7.652 -----	Croockewitt. J. 1, 394.
Cu Sn ₃ -----	7.447 -----	Mallet. D. J. 85, 378.
" -----	7.606 -----	Calvert and Johnson. J. 12, 120.
" -----	7.44 -----	Riche. J. 21, 270.
" -----	7.53 -----	Riche. J. 23, 1100.
" -----	7.657 -----	Thurston's Report, 295.
Cu Sn ₄ -----	7.472 -----	Mallet. D. J. 85, 378.
" -----	7.558 -----	Calvert and Johnson. J. 12, 120.
" -----	7.31 -----	Riche. J. 21, 270.
" -----	7.50 -----	Riche. J. 23, 1100.
" -----	7.552 -----	Thurston's Report, 295.
Cu Sn ₅ -----	7.442 -----	Mallet. D. J. 85, 378.
" -----	7.517 -----	Calvert and Johnson. J. 12, 120.
" -----	7.28 -----	Riche. J. 21, 270.
" -----	7.52 -----	Riche. J. 23, 1100.
" -----	7.487 -----	Thurston's Report, 295.
Cu Sn ₁₂ -----	7.360 -----	" " "
Cu Sn ₄₈ -----	7.305 -----	" " "
Cu Sn ₉₆ -----	7.299 -----	" " "
COPPER AND LEAD.		
Cu Pb -----	10.375 -----	Croockewitt. J. 1, 394.
Cu ₂ Pb ₃ -----	10.753 -----	" "
COPPER AND ANTIMONY.		
Cu ₁₁ Sb ₂ -----	8.829 } -----	Laist and Norton. A. C. J. 10, 60.
" Horsfordite -----	8.812 } -----	
Cu ₄ Sb -----	8.871 -----	Kamenski.* P. M. (5), 17, 274.
Cu ₂ Sb -----	8.339 -----	" "
Cu Sb -----	7.990 -----	Calvert and Johnson. J. 12, 120.
COPPER AND BISMUTH.		
Cu Bi -----	9.634 -----	Calvert and Johnson. J. 12, 120.
SILVER AND TIN.		
Ag ₄ Sn -----	9.953, 14°.8 -----	Holzmann. P. T. 1860, 177.
Ag ₂ Sn -----	9.507, 12°.9 -----	" "
Ag Sn -----	8.828, 13°.8 -----	" "
Ag Sn ₂ -----	8.223, 16°.3 -----	" "

* Kamenski gives data for seventeen other Cu Sb alloys.

ALLOY.	SPECIFIC GRAVITY.	AUTHORITY.
SILVER AND TIN—con- tinued.		
Ag Sn ₃ -----	7.936, 19°.3 -----	Holzmann. P. T. 1860, 177.
Ag Sn ₅ -----	7.551, 18°.8 -----	" "
Ag Sn ₆ -----	7.666, 18°.4 -----	" "
Ag Sn ₁₈ -----	7.421, 18°.6 -----	" "
SILVER AND LEAD.		
Ag ₄ Pb -----	10.800, 13°.5 -----	Matthiessen. P. T. 1860, 177.
Ag ₂ Pb -----	10.925, 13°.8 -----	" "
Ag Pb -----	10.054, 12°.5 -----	" "
Ag Pb ₂ -----	11.144, 18°.2 -----	" "
Ag Pb ₄ -----	11.196, 21° -----	" "
Ag Pb ₁₀ -----	11.285, 22°.2 -----	" "
Ag Pb ₂₅ -----	11.334, 20°.6 -----	" "
SILVER AND COPPER.*		
Ag ₃ Cu ₂ -----	9.9045 -----	Levol. J. 5, 768.
" Solid -----	9.9045 -----	Roberts. C. N. 31, 143.
" Molten -----	9.0554 -----	
GOLD AND TIN.		
Au ₄ Sn -----	16.367, 15°.4 -----	Holzmann. P. T. 1860, 177.
Au ₂ Sn -----	14.244, 14°.2 -----	" "
Au Sn -----	11.833, 14°.6 -----	" "
Au ₂ Sn ₃ -----	10.794, 23°.6 -----	" "
Au Sn ₂ -----	10.168, 23°.7 -----	" "
Au ₂ Sn ₅ -----	9.715, 22°.4 -----	" "
Au Sn ₃ -----	9.405, 23°.7 -----	" "
Au Sn ₄ -----	8.931, 25°.6 -----	" "
Au Sn ₆ -----	8.470, 23°.1 -----	" "
Au Sn ₉ -----	8.118, 22°.4 -----	" "
Au Sn ₁₅ -----	7.801, 22°.8 -----	" "
Au Sn ₅₀ -----	7.441, 22°.9 -----	" "
GOLD AND LEAD.		
Au ₄ Pb -----	17.013, 14°.3 -----	Matthiessen. P. T. 1860, 177.
Au ₂ Pb -----	15.603, 14°.5 -----	" "
Au Pb -----	14.466, 14°.3 -----	" "
Au Pb ₂ -----	13.306, 22°.1 -----	" "
Au Pb ₃ -----	12.737, 21°.3 -----	" "
Au Pb ₄ -----	12.445, 21°.6 -----	" "
Au Pb ₅ -----	12.274, 19°.4 -----	" "
Au Pb ₁₀ -----	11.841, 23°.3 -----	" "
GOLD AND BISMUTH.		
Au ₂ Bi -----	14.844, 16° -----	Holzmann. P. T. 1860, 177.
Au Bi -----	13.403, 16°.5 -----	" "
Au Bi ₂ -----	12.067, 16 -----	" "
Au Bi ₄ -----	11.025, 23° -----	" "

* See Karmarsch, Beiblätter 2, 194, for sixteen Ag Cu alloys.

ALLOY.	SPECIFIC GRAVITY.	AUTHORITY.
GOLD AND BISMUTH— continued.		
Au Bi ₈ -----	10.452, 21°.4 -----	Holzmann. P. T. 1860, 177.
Au Bi ₂₀ -----	10.076, 18°.7 -----	" "
Au Bi ₄₀ -----	9.942, 21°.2 -----	" "
Au Bi ₉₀ -----	9.872, 21° -----	" "
GOLD AND COPPER.		
Au ₆ Cu -----	17.9340 -----	Roberts. Bei. 2, 327.
Au ₃ Cu -----	17.1653 -----	" "
Au ₂ Cu -----	16.4832 -----	" "
GOLD AND SILVER.		
Au ₆ Ag -----	18.041, 13°.1 -----	Matthiessen. P. T. 1860, 177.
Au ₄ Ag -----	17.540, 12°.3 -----	" "
Au ₂ Ag -----	16.354, 13° -----	" "
Au Ag -----	14.870, 13° -----	" "
Au Ag ₂ -----	13.432, 14°.3 -----	" "
Au Ag ₄ -----	12.257, 14°.7 -----	" "
Au Ag ₈ -----	11.760, 13°.1 -----	" "
PALLADIUM AND LEAD.		
Pd ₃ Pb -----	11.225 -----	Bauer. J. 24, 317.
PLATINUM AND LEAD.		
Pt Pb -----	15.77 -----	Bauer. Z. C. 14, 48.
IRIDIUM AND OSMIUM.		
Ir Os. Newjanskite -----	19.386—19.471 -----	Berzelius. Dana's Min.
Ir Os ₄ . Sisserskite -----	21.118 -----	" "
TRIPLE ALLOYS.*		
Cd Pb ₃ Bi ₄ -----	10.563 -----	v. Hauer. J. 18, 236.
Cd ₂ Pb ₇ Bi ₈ -----	10.732 -----	" "
Pb Sn ₂ Bi -----	9.194, 11° -----	Regnault. P. A. 53, 67.
Pb Sn ₂ Bi ₂ -----	9.253, 20° -----	" "
Pb ₄ Sn ₆ Bi ₇ . Rose's alloy -----	9.5125, 4° -----	Spring. Ann. (5), 7, 196.
Pb ₈ Sn ₁₀ Bi ₁₃ . Darcet's " -----	9.6401, 4° -----	" "
Sn ₂ Sb Bi -----	7.883, 20° -----	Regnault. P. A. 53, 67.
Cu ₃ Ni Sb ₃ . Furnace prod- uct. -----	8.004 -----	Sandberger. J. 11, 202.
QUADRUPLE ALLOYS.		
Cd Sn Pb Bi ₂ -----	9.765 -----	v. Hauer. J. 18, 236.
Cd Sn ₂ Pb ₂ Bi ₄ -----	9.784 -----	" "
Cd ₂ Sn ₂ Pb Bi ₄ . Wood's alloy. -----	9.1106, 4° -----	Spring. Ann. (5), 7, 196.
Cd ₃ Sn ₄ Pb ₄ Bi ₈ -----	9.725 -----	v. Hauer. J. 18, 236.
Cd ₄ Sn ₅ Pb ₅ Bi ₁₀ -----	9.685 -----	" "
Cd ₄ Sn ₅ Pb ₆ Bi ₁₁ . Lipo- witz' alloy. -----	9.7244, 4° -----	Spring. Ann. (5), 7, 196.

* For the triple alloys of Cu Sn Zn see Thurston's Report. For many amalgams see Joule, J. C. S., vol. 16, 1863. For alloys of platinum and gold see Prinsep, P. T. 1828.

XLV. HYDROCARBONS.

1st. Paraffins. $C_n H_{2n+2}$.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methane. Liquefied	CH_4	.37	Wroblevsky. C. R. 99, 136.
"	"	.414	{ Olszewski. P. A. (2), 31, 73.
"	"	.415	
"	"	.416	
Propane	C_3H_8	.613, -25°	Lefebvre. J. 21, 329.
Butane	C_4H_{10}	.600, 0°	Pelouze and Cahours. J. 16, 524.
"	"	.600, 0°	Ronalds. J. 18, 507.
"	"	.624, -1°	Lefebvre. J. 21, 329.
Normal pentane. (B. 39°)	C_5H_{12}	.636, 17°	Schorlemmer. J. 15, 386.
"	"	.6263, 17°	Schorlemmer. J. 19, 527.
"	"	.626, 14°	Cahours and Demarcay. C. R. 80, 1569.
"	"	.6267, 14°	Lachowicz. A. C. P. 220, 191.
"	"	.624, $11^\circ.5$	Gladstone. Bei. 9, 249.
"	"	.6323, 17°	Norton and Andrews. A. C. J. 8, 7.
Isopentane. (B. 30°)	"	.6415, $11^\circ.2$	Frankland. J. 3, 481.
"	"	.6385, $14^\circ.2$	
"	"	.628, 18°	Pelouze and Cahours. J. 16, 527.
"	"	.6375, 13°	Just. A. C. P. 220, 153.
"	"	.6282, $13^\circ.7$	Schiff. G. C. I, 13, 177.
"	"	.6132, $30^\circ.5$	
"	"	.6402, 0°	Bartolli and Stracciati. Bei. 9, 697.
"	"	.6111, 30°	
Normal hexane. (B. 69°)	C_6H_{14}	.6745, 18°	Williams. J. 10, 418.
"	"	.669, 16°	Pelouze and Cahours. J. 15, 410.
"	"	.678, $15^\circ.5$	Schorlemmer. J. 15, 386.
"	"	.6617, $17^\circ.5$	Dale. J. 17, 381.
"	"	.6645, $16^\circ.5$	Wanklyn and Erlenmeyer. J. 16, 521.
"	"	.6630, 17°	Schorlemmer. A. C. P. 161, 263.
"	"	.689, 0°	Warren. J. 21, 330.
"	"	.6641, 18°	Thorpe and Young. A. C. P. 165, 1.
"	"	.6620, $19^\circ.5$	
"	"	.667, 13°	Cahours and Demarcay. C. R. 80, 1570.
"	"	.6199, $60^\circ.8$	Ramsay. J. C. S. 35, 463.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Normal hexane-----	C_6H_{14} -----	.6753, 0° --- } .6129, 69° -- } .6985, 14° ----	Zander. A. C. P. 214, 181. Lachowicz. A. C. P. 220, 192.
" "-----	"-----	.6681, 10°.8 } .6142 } 68°.6 } .6143 } .6603, 20° ----	Schiff. G. C. I. 13, 177. Brühl. A. C. P. 200, 183.
" "-----	"-----	.6950, 0° -- } .6343, 68° -- }	Bartoli and Strac- ciati. Bei. 9, 697.
" "-----	"-----	.6745, 18° ----	Norton and An- drews. A. C. J. 8, 7.
Isohexane. (B. 62°) ----	"-----	.7011, 0° ----	Wurtz. J. 8, 576.
"-----	"-----	.676, 0° ----	Warren. J. 21, 330.
Hexane. B. 48°—62°----	"-----	.6317, 25°.5----	Gladstone. Bei. 9. 249.
" B. 53°—60°-----	"-----	.6413, 25° ----	" "
Methyl-diethyl-methane. (B. 64°.)	"-----	.6765, 20°.5----	Wislicenus. A. C. P. 219, 315.
Tetramethyl-ethane, or } diisopropyl. (B. 58°.) }	"-----	.6769, 10° } .6701, 17°.5 } .6569, 29° }	Schorlemmer. J. 20, 566.
" "-----	"-----	.668, 0° ----	Riche. Ann. (3), 59, 426.
" "-----	"-----	.6829, 0° --- }	Zander. A. C. P.
" "-----	"-----	.6286, 58° -- }	214, 181.
Hexane from suberic acid. B. 78°.	"-----	.671, 26° ----	Riche. Ann. (3), 59, 426.
Normal heptane. (B. 98°.4)	C_7H_{16} -----	.709, 17°.5----	Schorlemmer. J. 15, 386.
From coal oil.	"-----	.7122, 16° ----	Schorlemmer. J. 16, 532.
" " "petroleum-----	"-----	.6851, 17°.5----	Dale. J. 17, 381.
" " "azelaic acid-----	"-----	.6840, 20°.5----	Schorlemmer and Dale. A. C. P. 136, 266.
" "-----	"-----	.7085, 0° ----	Warren and Storer. J. 21, 331.
" "-----	"-----	.691, 12° ----	Cahours and Demar- çay. C. R. 80, 1570.
" " From petro- leum.	"-----	.6967, 19° ----	Beilstein and Kur- batow. Ber. 13, 2028.
" "-----	"-----	.6915, 18° -- }	Thorpe and Young.
" "-----	"-----	.6910, 19° -- }	A. C. P. 165, 1.
" " (Abietene)-----	"-----	.694-----	Wenzell. C. N. 39, 182.
" " "-----	"-----	.70048, 0° ----	Thorpe. J. C. S.
" " "-----	"-----	.61386, 98°.43--	37, 371.
" "-----	"-----	.7176, 20° ----	Lachowicz. A. C. P. 220, 193.
" "-----	"-----	.7291, 20° ----	Lachowicz. A. C. P. 220, 203.
" "-----	"-----	.7023, 14° ----	Lachowicz. A. C. P. 220, 204.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Isoheptane*, ethyl-amyl, or dimethyl-butyl-me- thane. B. 90°.3.	C_7H_{16} -----	.7069, 0° ----	Wurtz. J. 8, 576.
"	"	.6819, 17°.5 } ----	Schorlemmer. A. C. P. 136, 259.
"	"	.6795, 20° } ----	
"	"	.6789, 19° ----	Schorlemmer. A. C. P. 136, 264.
"	"	.7259, 0° ----	Schorlemmer. A. C. P. 136, 269. From petroleum.
"	"	.7148, 15° ----	
"	"	.6999, 32° ----	
"	"	.6867, 48° ----	
"	"	.6833, 18°.4 ----	Grimshaw. A. C. P. 166, 163.
"	"	.69692, 0° ----	} Thorpe. J. C. S. 37, 371.
"	"	.61606, 90°.3 ----	
"	"	.6060, 91° ----	Ramsay. J. C. S. 35, 463.
Methyl-ethyl-propyl-me- thane. (B. 91°.)	"	.6895, 20° ----	Just. A. C. P. 220, 155.
Triethyl-methane. (B. 96°)	"	.689, 27° ----	Ladenburg. B. S. C. 18, 548.
Dimethyl-diethyl-me- } thane. (B. 86°—87°.) }	"	.7111, 0° ----	{ Friedel and Laden- burg. J. P. C. 101, 315.
"	"	.6958, 20°.5 ----	
" From petroleum	"	.709, 16° ----	Schorlemmer. A. C. P. 166, 172.
Heptane from petroleum	"	.7328, 0° ----	{ Bartoli and Strac- ciati. Bei. 9, 697.
" (B. 92°—94°)	"	.6473, 92°—94°	
"	"	.7303, 0° ----	
"	"	.6462, 92°—94°	
Normaloctane. (B. 125°.5)	C_8H_{18} -----	.6945, 18° ----	Williams. J. 10, 418.
"	"	.7083, 12°.5 ----	Schorlemmer.
"	"	.7032, 17° ----	Schorlemmer. A. C. P. 161, 263.
"	"	.723, 0° } ----	Riche. J. 13, 248.
"	"	.721, 10° } ----	
"	"	.719, 17°.5 ----	Schorlemmer. J. 15, 386.
"	"	.726, 15° ----	Pelouze and Ca- hours. J. 16, 524.
"	"	.728, 0° ----	Wurtz. J. 16, 509.
"	"	.7207, 15°.5 } ----	{ Thorpe and Young. Two lots. A. C. P. 165, 1.
"	"	.7165, 15°.6 } ----	
"	"	.723, 13° ----	Cahours and Demar- çay. C. R. 80, 1571.
"	"	.71883, 0° ----	} Thorpe. J. C. S. 37, 371.
"	"	.61077, 125°.46	
" From co- nicein.	"	.712, 11° ----	Hofmann. Ber. 18, 13.
Tetramethyl-butane, or diisobutyl. (B. 108°.53.)	"	.6940, 18° ----	Kolbe. J. 1, 559.
"	"	.7057, 0° ----	Wurtz. J. 8, 576.
"	"	.7135, 0° ----	Kopp. A. C. P. 95, 307.
"	"	.7001, 16°.4 } ----	

* For a mixture of heptane and isoheptane from petroleum, B. 92°—94°, Pelouze and Cahours give a sp. g. of .699, 16°.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Tetramethyl-butane, or diisobutyl. (B. 108°.53.)	$C_8 H_{18}$	.7091, 0°	Williams. J. C. S. 35, 125.
"	"	.7085, 0°	
"	"	.7015, 10°	
"	"	.6931, 20°	
"	"	.686, 30°	
"	"	.677, 40°	
"	"	.669, 50°	
"	"	.626, 100°	Schorlemmer. J. 20, 567.
"	"	.698, 16°.5	
"	"	.6712, 49°	Thorpe. J. C. S. 37, 371.
"	"	.7111, 0°	
"	"	.61549, 108°.53	Schiff. G. C. I. 13, 177.
"	"	.7001, 12°.1	
"	"	.6166 } 107°.8	
"	"	.6167 }	
Octane from petroleum. (B. 121°.)	"	.732, 12°	Lemoine. B. S. C. 41, 161.
" " " (B. 116°—	"	.7463, 0°	Bartoli and Strac- ciati. Bei. 9, 697.
" " " 118°)	"	.6536, 116°-118°	
Normal nonane. (B. 149°)	$C_9 H_{20}$	.741	Pelouze and Ca- hours.* J. 16, 524.
" " "	"	.744, 13°	Cahours and Demar- çay.* C. R. 80, 1571.
" " "	"	.7279, 13°.5	Thorpe and Young. A. C. P. 165, 1.
" " "	"	.7330, 0°	Krafft. Ber. 15, 1687.
" " "	"	.7228, 13°.5	
" " "	"	.7217, 15°	
" " "	"	.7177, 20°	
" " "	"	.6541, 99°.1	
" " "	"	.7124, 21°	Lachowicz. A. C. P. 220, 194.
" " (B. 136°)	"	.742, 12°	Lemoine.* B. S. C 41, 161.
" " (B. 130°)	"	.743, 0°	" "
" " "	"	.734, 12°.7	
" " "	"	.731, 16°	
" " "	"	.725, 24°	
" " (B. 136°	"	.7623, 0°	Bartoli and Strac- ciati.* Bei. 9, 697.
" " —138°.)	"	.6492, 136-138°	
Tetramethyl pentane, or butyl-amyl. (B. 132.)	"	.7247, 0°	Wurtz. J. 8, 570.
Normal decane. (B. 167°)	$C_{10} H_{22}$	.7394, 13°.5	Thorpe and Young. A. C. P. 165, 1.
" " (B. 170°)	"	.7562, 15°	Jacobson. A. C. P. 184, 202.
" " "	"	.7516, 22°	
" " (B. 173°)	"	.7456, 0°	Krafft. Ber. 15, 1687.
" " "	"	.7452, 0°	
" " "	"	.7342, 15°	
" " "	"	.7304, 20°	
" " "	"	.6690, 99°.3	Lachowicz. A. C. P. 220, 180.
" " "	"	.73097, 18°	
Diisoamyl. (B. 155°)	"	.7704, 11°	Frankland. J. 3, 479.

* Preparations from petroleum, boiling at 130° to 140°, and doubtless containing admixed isomers

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Tridecane. (B. 219°) -----	$C_{13}H_{28}$ -----	.796, 17° -----	Pelouze and Cahours.* J. 16, 524.
“ (B. 217°.5) ----	“ -----	.793 -----	Cloez.† C. R. 85, 1003.
“ (B. 218°-220°) -----	“ -----	.8016, 0° -----	} Bartoli and Stracciati.* Bei. 9, 697.
“ “ -----	“ -----	.6469, 218-220° -----	
Normal tridecane. (B. 234°) -----	“ -----	.7716, 0° -----	} Kraft. Ber. 15, 1687.
“ “ -----	“ -----	.7713, 0° -----	
“ “ -----	“ -----	.7608, 15° -----	
“ “ -----	“ -----	.7571, 20° -----	
“ “ -----	“ -----	.7008, 99° -----	
Tetradecane. (B. 238°) -----	$C_{14}H_{30}$ -----	.809, 20° -----	Pelouze and Cahours.* J. 16, 524.
“ (B. 236°) ----	“ -----	.812 -----	Cloez.† C. R. 85, 1003.
“ (B. 236°-240°) -----	“ -----	.8129, 0° -----	} Bartoli and Stracciati.* Bei. 9, 697.
“ “ -----	“ -----	.6412, 236-240° -----	
Normal tetradecane. -----	“ -----	.7753, 4°.5 -----	} Kraft. Ber. 15, 1687.
“ “ (B. 252°.5) -----	“ -----	.7750, 5° -----	
“ “ -----	“ -----	.7715, 10° -----	
“ “ -----	“ -----	.7681, 15° -----	
“ “ -----	“ -----	.7645, 20° -----	
“ “ -----	“ -----	.7087, 99°.2 -----	} Kraft. Ber. 19, 2218.
“ “ -----	“ -----	.7738, 5°.4 -----	
Pentadecane. (B. 260°) -----	$C_{15}H_{32}$ -----	.825, 19° -----	Pelouze and Cahours.* J. 16, 524.
“ (B. 258°) ----	“ -----	.830 -----	Cloez.† C. R. 85, 1003.
“ (B. 258°-262°) -----	“ -----	.8224, 0° -----	} Bartoli and Stracciati.* Bei. 9, 697.
“ “ -----	“ -----	.6385, 258-262° -----	
Normal pentadecane. -----	“ -----	.7757, 10° -----	} Kraft. Ber. 15, 1687.
“ “ (B. 270°.5) -----	“ -----	.7759, 10° -----	
“ “ -----	“ -----	.7724, 15° -----	
“ “ -----	“ -----	.7689, 20° -----	
“ “ -----	“ -----	.7136, 99°.3 -----	
Hexdecane, dioctyl, or diisooctyl. (B. 278.) -----	$C_{16}H_{34}$ -----	.850 -----	Cloez.† C. R. 85, 1003.
“ “ -----	“ -----	.7438, 15° -----	Eichler. Ber. 12, 1882.
“ (B. 268°.5) -----	“ -----	.8022, 0° -----	Alechin. Ber. 16, 1225.
“ (B. 264°) -----	“ -----	.80011, 18° -----	Lachowicz. A. C. P. 220, 187.
“ (B. 278°-282°) -----	“ -----	.8287, 0° -----	} Bartoli and Stracciati.* Bei. 9, 697.
“ “ -----	“ -----	.6396, 278-282° -----	
Normal hexdecane. -----	“ -----	.7754, 18° -----	} Kraft. Ber. 15, 1687.
“ “ (B. 287°.5) -----	“ -----	.7742, 20° -----	
“ “ -----	“ -----	.7707, 25° -----	
“ “ -----	“ -----	.7197, 99° -----	
“ “ -----	“ -----	.7754, 14°.2 -----	
Heptadecane. (B. 303°) -----	$C_{17}H_{36}$ -----	.7764, 22°.5 -----	} Kraft. Ber. 19, 2218.
“ -----	“ -----	.7767, 22°.5 -----	
“ -----	“ -----	.7749, 25° -----	
“ -----	“ -----	.7714, 30° -----	
“ -----	“ -----	.7245, 99° -----	

* From petroleum. Probably a mixture of isomers.

† From hydrogen evolved from cast iron. Constitution undetermined.

‡ All of Kraft's paraffins are said to belong to the normal series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Octadecane. (B. 317°)-----	C ₁₈ H ₃₈ -----	.7768, 28° --	Krafft. Ber. 15, 1687. Melts at 28°.
"-----	"-----	.7754, 30° --	
"-----	"-----	.7719, 35° --	
"-----	"-----	.7685, 40° --	
"-----	"-----	.7288, 99° --	
"-----	"-----	.7766, 28° --	Krafft. Ber. 19, 2218.
Nondecane. (B. 330°)-----	C ₁₉ H ₄₀ -----	.7774, 32° --	Krafft. Ber. 15, 1687. Melts at 32°.
"-----	"-----	.7754, 35° --	
"-----	"-----	.7720, 40° --	
"-----	"-----	.7323, 99°.3	
Eicosane. (M. 36°.7)-----	C ₂₀ H ₄₂ -----	.7779, 36°.7	Krafft. Ber. 15, 1711.
"-----	"-----	.7487, 80°.2	
"-----	"-----	.7363, 99°.2	
"-----	"-----	.7776, 36°.7	Krafft. Ber. 19, 2218.
Heneicosane. (M. 40°.4)-----	C ₂₁ H ₄₄ -----	.7783, 40°.4	Krafft. Ber. 15, 1711.
"-----	"-----	.7557, 74°.7	
"-----	"-----	.7400, 98°.9	
Docosane. (M. 44°.4)-----	C ₂₂ H ₄₆ -----	.7782, 44°.4	" "
"-----	"-----	.7549, 79°.6	
"-----	"-----	.7422, 99°.2	
Tricosane. (M. 47°.7)-----	C ₂₃ H ₄₈ -----	.7785, 47°.7	" "
"-----	"-----	.7570, 80°.8	
"-----	"-----	.7456, 98°.8	
Tetracosane. (M. 51°.1)-----	C ₂₄ H ₅₀ -----	.7786, 51°.1	" "
"-----	"-----	.7628, 76° --	
"-----	"-----	.7481, 98°.9	
Heptacosane. (M. 59°.5)-----	C ₂₇ H ₅₆ -----	.7796, 59°.5	" "
"-----	"-----	.7659, 80°.8	
"-----	"-----	.7545, 99° --	
Hentriacontane. (M. 68°.1)-----	C ₃₁ H ₆₄ -----	.7808, 68°.1	" "
"-----	"-----	.7730, 80°.8	
"-----	"-----	.7619, 98°.8	
Dotriacontane. (M. 70°)-----	C ₃₂ H ₆₆ -----	.7810, 70° --	Krafft. Ber. 19, 2218.
Pentatriacontane.	C ₃₅ H ₇₂ -----	.7816, 74°.7	Krafft. Ber. 15, 1711.
" (M. 74°.7)-----	"-----	.7775, 80°.8	
"-----	"-----	.7664, 99°.2	
Paraffin.* M. 56°-----	C _n H _{2n+2} -----	.913 -----	From ozokerite. Sauerlandt. J. 1879, 1147.
" M. 61°-----	"-----	.921 -----	
" M. 67°-----	"-----	.927 -----	
" M. 72°-----	"-----	.934 -----	
" M. 76°-----	"-----	.940 -----	
" M. 82°-----	"-----	.943 -----	
" M. 38°-----	"-----	.872, 17° --	
" "-----	"-----	.879, 55° --	
" M. 43°-----	"-----	.883, 17° --	
" "-----	"-----	.788, 55° --	
" "-----	"-----	.889, 17° --	Albrecht. D. J. 218, 280.
" "-----	"-----	.785, 55° --	
" M. 46°-----	"-----	.887, 17° --	
" "-----	"-----	.781, 60°-65°	
" M. 47°-----	"-----	.900, 17° --	
" "-----	"-----	.775, 60°-65°	
" M. 51°-----	"-----	.908, 17° --	
" "-----	"-----	.775, 60°-65°	
" M. 56°-----	"-----	.912, 17° --	
" "-----	"-----	.777, 60°-65°	

* No attempt has been made to secure completeness concerning the specific gravity of common paraffin. The data given are included only to facilitate comparison.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Paraffin. M. 38°-----	$C_n H_{2n+2}$ -----	.874, 21°, s.-----	} From shale oil. Beilby. J. C. S., Sept., 1883, 388. Data given for sp. g. of paraffin in solution.
"-----	"-----	.783, 38°-----	
"-----	"-----	.779, 43°.4-----	
"-----	"-----	.775, 49°-----	
"-----	"-----	.771, 54°.5-----	
"-----	"-----	.767, 60°-----	
"-----	"-----	.763, 65°.5-----	

2d. Olefines. $C_n H_{2n}$.

NAME.	FORMULA.	SP. GRAVITY	AUTHORITY.
Ethylene. Liquefied-----	$C_2 H_4$ -----	.414, -21°-----	} Cailletet and Ma- thias. C. R. 102, 1202.
"-----	"-----	.342, -7°.3-----	
"-----	"-----	.353, -3°.7-----	
"-----	"-----	.332, +4°.3-----	
"-----	"-----	.306, +6°.2-----	
Butylene-----	$C_4 H_8$ -----	.739, 0°-----	Chapman. J. 20, 581.
"-----	"-----	.635, -13°.5-----	} Puchot. Ann. (5), 28, 207
"-----	"-----	.639, -14°.2-----	
Amylene-----	$C_5 H_{10}$ -----	.6517, 16°.5-----	Mendelejeff. J. 13, 7.
"-----	"-----	.6633, 0°-----	Bauer. J. 14, 660.
"-----	"-----	.66277, 0°-----	} Buff. A. C. P., 4 Supp. Bd., 129.
"-----	"-----	.65490, 10°-----	
"-----	"-----	.64450, 17°-----	
"-----	"-----	.62384, 33°-----	
"-----	"-----	.625812, 33°.5-----	
"-----	"-----	.62634, 35°.5-----	} Buff. J. 21, 334.
"-----	"-----	.679, 0°-----	
"-----	"-----	.6319, 35°-----	Ramsay. J. C. S. 85, 463.
"-----	"-----	.6617, 9°.9-----	} Schiff. G. C. I. 13, 187.
"-----	"-----	.6340, 35°.6-----	
"-----	"-----	.6356, 36°.3-----	
"-----	"-----	.6503, 21°-----	Gladstone. Bei. 9, 249.
Trimethyl ethylene-----	"-----	.6783, 0°-----	Le Bel. B. S. C. 25, 547.
β. Ethyl methyl ethylene-----	"-----	.670, 0°-----	Le Bel. B. S. C. 25, 546.
Isopropyl ethylene-----	"-----	.648, 0°-----	Flawitzky. Ber. 11, 992.
Hexylene-----	$C_6 H_{12}$ -----	.709, 12°-----	Pelouze and Ca- hours. J. 16, 526.
"-----	"-----	.6937 } 0°-- {	} Wurtz. J. 17, 512.
"-----	"-----	.6986 }-----	
"-----	"-----	.702, 0°-----	Geibel and Buff. J. 21, 336.
"-----	"-----	.6996 } 0°-- {	} Hecht. A. C. P. 165, 146.
"-----	"-----	.6997 }-----	
Tetramethyl ethylene-----	"-----	.712-----	Pawlow. A. C. P. 196, 122.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
<i>a.</i> Ethyl dimethyl ethylene. " "	$C_6 H_{12}$ -----	.712, 0° -----	Jawein. Ber. 11, 1258.
" " " "	" -----	.698, 19° -----	
<i>β.</i> Ethyl dimethyl ethylene. " "	" -----	.702, 0° -----	" "
" " " "	" -----	.687, 19° -----	
Heptylene -----	$C_7 H_{14}$ -----	.718, 18° -----	Williams. J. 11, 438.
" -----	" -----	.7060, 12°.5 -----	Schorlemmer. A. C. P. 136, 257.
" -----	" -----	.7026, 19°.5 -----	" "
" -----	" -----	.7060, 16° -----	Grimshaw. A. C. P. 166, 163.
" -----	" -----	.742, 20° -----	Renard. Ber. 15, 2368.
" -----	" -----	.71812, 20° -----	Sokolow. Ber. 21, ref. 56.
Dimethyl isopropyl ethylene. " " " "	" -----	.6985, 14° -----	Markownikow. Z. C. 14, 268.
" " " " " "	" -----	.7144, 0° -----	Pawlow. A. C. P. 173, 194.
Octylene -----	$C_8 H_{16}$ -----	.708, 16° -----	Cahours. C. R. 31, 143.
" -----	" -----	.723, 17° -----	Bouis. J. 7, 582.
" -----	" -----	.737, 20° -----	Fittig. J. 13, 320.
" -----	" -----	.7396, 0° -----	Warren and Storer. J. 21, 331.
" -----	" -----	.7217, 17° -----	Möslinger. Ber. 9, 1000.
" -----	" -----	.7294, 9°.9 -----	Schiff. G. C. I. 13, 177.
" -----	" -----	.6306, 123°.4 -----	
" -----	" -----	.7222, 22° -----	Lachowicz. A. C. P. 220, 185.
" -----	" -----	.7197, 20° -----	Brühl. A. C. P. 235, 1.
" -----	" -----	.73645, 20° -----	Sokolow. Ber. 21, ref. 56.
Diisopropyl ethylene -----	" -----	.7526, 16° -----	Williams. Ber. 10, 908.
Methyl ethyl propyl ethylene. " " " "	" -----	.73138, 20° -----	Sokolow. Ber. 21, ref. 56.
Diisobutylene -----	" -----	.734, 0° -----	Butlerow. J. C. S. 34, 122.
" -----	" -----	.737, 0° -----	Lermontoff. A. C. P. 196, 116.
Nonylene. B. 145° -----	$C_9 H_{18}$ -----	.757, 20°.5 -----	Fittig. J. 13, 321.
" B. 153° -----	" -----	.7618, 0° -----	Warren and Storer. J. 21, 331.
" B. 134° -----	" -----	.853, 18°.4 -----	Lemoine. B. S. C. 41, 161.
" -----	" -----	.74333, 20° -----	Sokolow. Ber. 21, ref. 56.
Diamylene. B. 165° -----	$C_{10} H_{20}$ -----	.7777, 0° -----	Bauer. J. 14, 660.
" B. 151° -----	" -----	.8416, 0° -----	Schneider. A. C. P. 157, 208.
" -----	" -----	.8248, 20° -----	
" B. 174°.6 -----	" -----	.7912, 0° -----	Warren and Storer. J. 21, 332.
" B. 175°.8 -----	" -----	.823, 0° -----	Warren and Storer. J. 21, 331.
" -----	" -----	.7789, 10° -----	Schiff. G. C. I. 13, 177.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Diamylene. B. 156°	$C_{10}H_{20}$	.6611	Schiff. G. C. I. 13, 177.
"	"	.6615	
"	"	.77753, 15°.2	
" B. 165°	"	.855, 14°	Nasini and Bernheimer. G. C. I. 15, 50.
" B. 164°	"	.7387, 20°	Lemoine. B. S. C. 41, 161.
Endecylene	$C_{11}H_{22}$	.782, 0°	Lachowicz. A. C. P. 220, 177.
"	"	.8398, 0°	Warren. J. 21, 330.
"	"	.791, 0°	Warren and Storer. J. 21, 332.
Dodecylene. B. 216°	$C_{12}H_{24}$	.791, 0°	Warren. J. 21, 330.
" B. 212°.6	"	.8361	Warren and Storer. J. 21, 332.
" B. 208°-219°.	"	.8543	
"	"	.8654	
"	"	.7954, —31°	Krafft. Ber. 16, 3018.
"	"	.7729	
"	"	.7732	
"	"	.7620, 15°	From two sources. Jawein. Ber. 11, 1258.
"	"	.7511, 30°	
"	"	.796, 0°	
Dihexylene. B. 196°-199°.	"	.786, 19°	Butlerow. Mem. Acad. St. Petersburg., 1879.
"	"	.809, 0°	
"	"	.798, 19°	
Triisobutylene. B. 178°	"	.774, 0°	Lermontoff. A. C. P. 196, 116.
"	"	.746, 50°	
"	"	.773	
"	"	.774	Five different lots. Puchot. Ann. (5), 28, 525.
" B. 180°	"	.782, 0°	
"	"	.7435, 51°.6	
"	"	.707, 99°.5	Warren and Storer. J. 21, 332.
"	"	.785, 0°	
"	"	.751, 44°.9	
"	"	.783, 0°	Krafft Ber. 16, 3018.
"	"	.738, 60°.5	
"	"	.707, 100°.2	
"	"	.780, 0°	Bauer. J. 14, 660.
"	"	.779, 0°	
"	"	.768, 14°	
Tridecylene	$C_{13}H_{26}$	.8445, 0°	Mendelejeff. J. 13, 7.
Tetradecylene	$C_{14}H_{28}$	.7936, —12°	Two samples. Krafft. Ber. 16, 3018.
"	"	.7852, 0°	
"	"	.7745, 15°	
"	"	.7638, 30°	Bouis. Watts' Dict. Dumas and Boullay. See Serullas.
Triamylene	$C_{15}H_{30}$	.8139	
Cetene. B. 275°	$C_{16}H_{32}$	.7893, 15°.2	
"	"	.7915, 4°	Krafft. Ber. 16, 3018.
"	"	.7839, 15°	
"	"	.7686, 37°.1	
"	"	.7917, 4°	Bouis. Watts' Dict. Dumas and Boullay. See Serullas.
"	"	.7842, 15°	
"	"	.7689, 37°.1	
Diocylene. B. 250°	"	.814, 15°	Bouis. Watts' Dict. Dumas and Boullay. See Serullas.
Etherol. B. 280°	"	.9174	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Etherol -----	$C_{16}H_{32}$ -----	.921 -----	Serullas. Ann. (2), 39, 178.
Octodecylene -----	$C_{18}H_{36}$ -----	.7910, 18° --	Krafft. Ber. 16, 3018.
" -----	" -----	.7881, 22°.1	
" -----	" -----	.7790, 35°.6	
Tetramylene -----	$C_{20}H_{40}$ -----	.8710, 0° -----	Bauer. J. 14, 660.
Cerotene -----	$C_{27}H_{54}$ -----	.861, 15° -----	Weltzien's "Zusammenstellung."
Melene -----	$C_{30}H_{60}$ -----	.89 -----	Watts' Dictionary.

3d. Acetylene Series and Derivatives.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Acetylene. Liquefied -----	C_2H_2 -----	.460, -7° --	Ansdell. C. N. 40, 136. Critical t°, 37°.05.
" " -----	" -----	.456, -3° --	
" " -----	" -----	.451, 0° -----	
" " -----	" -----	.441, 4°.4 -----	
" " -----	" -----	.432, 9° -----	
" " -----	" -----	.420, 16°.4 -----	
" " -----	" -----	.413, 20°.6 -----	
" " -----	" -----	.404, 26°.25 -----	
" " -----	" -----	.397, 30° -----	
" " -----	" -----	.381, 34° -----	
" " -----	" -----	.364, 35°.8 -----	
Valerylene. B. 41°—42° -----	C_5H_8 -----	.69999, 0° -----	Buff. A. C. P., 4 Supp. Bd., 129.
" -----	" -----	.687386, 17° -----	
" -----	" -----	.65719, 41° -----	
" -----	" -----	.65082, 42° -----	
Isopropyl acetylene -----	" -----	.652, 11° -----	Bruylants. Ber. 8, 407.
" " B. 28°—29° -----	" -----	.6854, 0° -----	Flawitzky and Kri- loff. Ber. 11, 1939.
Isoprene. B. 37°—38° -----	" -----	.6823, 20° -----	Williams. J. 13, 495.
" -----	" -----	.6709, 18° -----	Gladstone. J. C. S. 49, 623.
" Pentine -----	" -----	.6766, 18° -----	" "
Hexoylene. B. 80°—83° -----	C_6H_{10} -----	.710, 13° -----	Reboul and Truchot. J. 20, 587.
" -----	" -----	.7494, 0° -----	Hecht. Ber. 11, 1051.
" -----	" -----	.7377, 13° -----	
Diallyl. B. 59°.5 -----	" -----	.684, 14° -----	Berthelot and Luca. J. 1, 590.
" -----	" -----	.68724, 17° -----	Buff. A. C. P., 4th Supp. Bd., 129.
" -----	" -----	.64682, 59°.5 -----	
" -----	" -----	.64564, 58° -----	
" -----	" -----	.7074, 0° -----	Zander. A. C. P. 214, 181.
" -----	" -----	.6508, 59°.5 -----	Schiff. G. C. I. 13, 177.
" -----	" -----	.6983, 11°.9 -----	
" -----	" -----	.6503, 59°.3 -----	Brühl. Bei. 4, 780.
" -----	" -----	.6880, 20° -----	
Diallylene -----	C_6H_8 -----	.8579, 18°.2 -----	L. Henry. C. N. 38, 101.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Dipropargyl -----	$C_6 H_6$ -----	.81, 18° -----	L. Henry. J. C. S. (2), 11, 1215.
“ -----	“ -----	.82 -----	Berthelot and Ogier. J. C. S. 40, 719.
Ethyl propyl acetylene----	$C_7 H_{12}$ -----	.790, 0° -----	Béhal. Ber. 20, ref. 809.
Tetramethyl allylene ----	“ -----	.9513, 9° -----	L. Henry. Ber. 8, 400.
Methyl propyl allylene----	“ -----	.8031, 20° ----	Renard. C. R. 91, 419.
Heptidene -----	“ -----	.7458, 20° ----	Brühl. A. C. P. 235, 1.
Conylene -----	$C_8 H_{14}$ -----	.76076, 15° ----	Wertheim. A. C. P. 123, 157.
From allyl diethyl carbinol. “ “ -----	“ -----	.7734, 0° ----	Reformatsky. J. P. C. (2), 30, 217.
“ “ “ -----	“ -----	.75856, 15°.4	
“ “ “ -----	“ -----	.75622, 18°	
From allyl dipropyl carbinol. “ -----	$C_{10} H_{18}$ -----	.7870	Reformatsky. J. P. C. (2), 27, 389.
“ “ -----	“ -----	.7830	
“ “ -----	“ -----	.7825	
“ “ -----	“ -----	.7855	
“ “ -----	“ -----	.7726	
“ “ -----	“ -----	.7705	
“ “ -----	“ -----	.7738	
“ “ -----	“ -----	.7740, 16° --	
“ “ -----	“ -----	.7705	
“ “ -----	“ -----	.7681	
“ “ -----	“ -----	.7665	
“ “ -----	“ -----	.7703	
“ “ -----	“ -----	.7728, 20°.6	Nikolsky and Saytzeff. J. P. C. (2), 27, 383.
From allyl dimethyl carbinol. “ -----	$C_{12} H_{20}$ -----	.8530, 0° ----	
“ “ -----	“ -----	.8385, 20° --	
“ “ -----	“ -----	.8512, 0° --	Albitsky. J. P. C. (2), 30, 213.
“ “ -----	“ -----	.8449, 9°.8--	
“ “ -----	“ -----	.8349, 21°.4	
Dodecylidene -----	$C_{12} H_{22}$ -----	.8030, 0° --	Krafft. Ber. 17, 1371.
“ -----	“ -----	.7917, 15° --	
“ -----	“ -----	.7788, 32°.5	
Tetradecylidene -----	$C_{14} H_{26}$ -----	.8064, 6°.5--	“ “
“ -----	“ -----	.8000, 15°.2	
“ -----	“ -----	.7892, 30° --	
Benylene -----	$C_{15} H_{28}$ -----	.9114, 0° -----	Wertheim. A. C. P. 123, 157.
Trivalerylene -----	$C_{15} H_{24}$ -----	.862, 15° -----	Reboul. J. 20, 585.
Hexadecylidene -----	$C_{16} H_{30}$ -----	.8039, 20° } --	Krafft. Ber. 17, 1371.
“ -----	“ -----	.7969, 30° } --	
Octadecylidene -----	$C_{18} H_{34}$ -----	.8016, 30° -----	“ “
Eikosylene-----	$C_{20} H_{38}$ -----	.8181. 24° -----	Lippmann and Hawliczek. Ber. 12, 72.

4th. Benzene Series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Benzene	C_6H_6	.85, 15°.5	Faraday. P.T. 1825, 440.
"	"	.956, —18°.s.	Mitscherlich. A. C. P. 9, 43.
"	"	.85	Mansfield. J. 1, 711.
"	"	.85	
"	"	.89911, 0°	
"	"	.88372, 15°.2	Kopp. P. A. 72, 243.
"	"	.88354, 15°.3	
"	"	.8931, 5°—10°	
"	"	.8827, 10°—15°	Regnault. P. A. 62, 50.
"	"	.8838, 15°—20°	
"	"	.8841, 15°	Mendelejeff. J. 13, 7.
"	"	.8667	Church. J. 17, 531.
"	"	.8957, 0°	
"	"	.8820, 15°.5	Warren. J. 18, 515.
"	"	.895, 3°	
"	"	.812, 80°.5	Jungfleisch. C. R. 64, 911.
"	"	.8995, 0°	
"	"	.8890, 10°	
"	"	.8784, 20°	Louguinine. Ann. (4), 11, 453. Other values given for intermediate t's.
"	"	.8568, 40°	
"	"	.8349, 60°	
"	"	.8126, 80°	
"	"	.90023, 0°	
"	"	.89502, 5°	
"	"	.88982, 10°	
"	"	.88462, 15°	
"	"	.87940, 20°	
"	"	.87417, 25°	
"	"	.86891, 30°	
"	"	.86362, 35°	
"	"	.85829, 40°	
"	"	.85291, 45°	Adrieenz. Ber. 6, 442.
"	"	.84748, 50°	
"	"	.84198, 55°	
"	"	.83642, 60°	
"	"	.83078, 65°	
"	"	.82505, 70°	
"	"	.81923, 75°	
"	"	.81331, 80°	
"	"	.899487, 0°	
"	"	.883573, 15°	
"	"	.872627, 25°	Pisati and Paterno. J. C. S. (2), 12, 686.
"	"	.846170, 50°	
"	"	.818721, 75°	
"	"	.88029	Landolt. Ber. 9, 907.
"	"	.8773, 20°	Naumann. Ber. 10, 1422.
"	"	.8142, 80°	Ramsay. J. C. S. 35, 463.
"	"	.8858, 15°	Thorpe and Watts. J. C. S. 37, 102.
"	"	.8111, 80°	Schiff. Ber. 14, 2769.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Benzene	C_6H_6	.9000, 0°	Dieff. J. P. C. (2), 27, 368.
"	"	.8818, 20°	Schiff. G. C. I. 13, 177.
"	"	.8839, 14°.2	Brühl. Bei. 4, 780.
"	"	.8111, 80°.1	Flink. Bei. 8, 262.
"	"	.8799, 20°	Schall. Ber. 17, 2555.
"	"	.87901, 20°	
"	"	.8719, 25°.7	
"	"	.8845, 13°.8	
"	"	.8881, 7°.5	
"	"	.8901 } 10°	Gladstone. Bei. 9, 249.
"	"	.8903 }	
"	"	.8801, 20°	Knops. V. H. V. 1887, 17.
"	"	.85716, 40°.1	Taken at different pressures, each t° being the boiling point at the pressure observed. Neubek. Z. P. C. 1, 654.
"	"	.85493, 41°.3	
"	"	.84324, 53°.2	
"	"	.84006, 54°.7	
"	"	.83101, 64°.1	
"	"	.83081, 64°.2	
"	"	.82099, 72°.9	
"	"	.82079, 73°.4	
"	"	.81387 } 79°.2	
"	"	.81392 }	
"	"	.81297, 79°.9	Weegmann. Z. P. C. 2, 218.
"	"	.87907, 20°	
Toluene	C_7H_8	.86	Pelletier and Walter. Gm. H.
"	"	.821	Couerbe. Gm. H.
"	"	.864, 23°	Glénard and Boudault. Gm. H.
"	"	.87, 18°	Deville. Gm. H.
"	"	.8650	Church. J. 17, 531.
"	"	.8824, 0°	Warren. J. 18, 515.
"	"	.8720, 15°	
"	"	.881, 5°	Tollens and Fittig. A. C. P. 131, 303.
"	"	.8841, 0°	Louguinine. Ann. (4), 11, 453. Other values given for intermediate t°s.
"	"	.8657, 20°	
"	"	.8375, 50°	
"	"	.8086, 80°	
"	"	.7889, 100°	
"	"	.866, 20°	Post and Mehrrens. Ber. 8, 1551.
"	"	.8657, 20°	Naumann. Ber. 10, 1425.
"	"	.7650, 111°	Ramsay. J. C. S. 35, 463.
"	"	.8822, 0°	Naccari and Pagliani. Bei. 6, 88. Several other intermediate values are given.
"	"	.8797, 2°.77	
"	"	.8722, 10°.89	
"	"	.8692, 14°.13	
"	"	.8653, 18°.43	
"	"	.8556, 28°.74	
"	"	.8430, 42°.24	
"	"	.8258, 60°.04	
"	"	.8136, 72°.46	
"	"	.7874, 99°.01	
"	"	.7811, 105°.17	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Toluene	C_7H_8	.8708, 13°.1	} Schiff. G. C. I 13, 177.
"	"	.7780	
"	"	.77807	} 109°.2
"	"	.7781	
"	"	.8656, 20°	Brühl. Bei. 4, 780.
"	"	.7801, 109°	Schall. Ber. 17, 2204.
"	"	.8617, 26°	} Schall. Ber. 17 2555.
"	"	.85098, 34°.5	
"	"	.8704, 7°.5	Gladstone. Bei. 9, 249.
"	"	.8643	} 14° { Gladstone and Tribe. J. C. S. 47, 448.
"	"	.8691	
"	"	.82664, 61°.2	}
"	"	.82441, 62°.3	
"	"	.82435, 63°.5	}
"	"	.80656, 81°.2	
"	"	.80637, 81°.5	}
"	"	.79470	
"	"	.79494	} 93°.4 { Taken at different pressures, each t°. being the boiling point at the press- ure observed.
"	"	.78576, 102°.6	
"	"	.78515, 103°	} 110°.1 { Neubeck. Z. P. C. 1, 656.
"	"	.77816	
"	"	.77788	}
"	"	.77741, 110°.7	
"	"	.77694, 110°.8	} Mendeleeff. J. 13, 7. Beilstein. A. C. P. 133, 37.
Xylene*	$C_6H_4(C_2H_5)_2$	.8309, 15°	
"	"	.8668, 21°	} Louguinine. Ann. (4), 11, 453. Val- ues given for other intermediate t°.s.
"	"	.8770, 0°	
"	"	.8600, 20°	}
"	"	.8340, 50°	
"	"	.8073, 80°	} Naumann. Ber. 10, 1426.
"	"	.7892, 100°	
"	"	.8616, 20°	} Ramsay. J. C. S. 35, 463.
"	"	.7335, 132-134°	
"	"	.8619, 20°	Brühl. A. C. P. 235, 1.
Orthoxylene	" 1.2	.7559, 141°.1	Schiff. Ber. 15, 2974.
"	"	.8632, 18°	Gladstone. Bei. 9, 249.
"	"	.876, 24°.5	Colson. Ann. (6), 6, 86.
"	"	.81449, 90°.4	}
"	"	.81422, 90°.6	
"	"	.79497, 112°.7	} Taken at different pressures, each t°. being the boiling point at the press- ure observed.
"	"	.79435, 112°.9	
"	"	.78204	} 123°.8 { Neubeck. Z. P. C. 1, 656.
"	"	.78188	
"	"	.77398	} 133°.9 {
"	"	.77413	
"	"	.76684	} 141°.1 {
"	"	.76661	
"	"	.76569, 142°.5	} Pinette. A. C. P. 243, 50.
"	"	.8932, 0°	
"	"	.7684, 141°.9	

* Exact character not specified. For sp. gr. of several mixed xylenes see Lewinstein, Ber. 17, 446.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Metaxylene	$C_6H_4(CH_3)_2$ 1.3	.878, 0°	Warren. J. 18, 515.
"	"	.866, 15°	
"	"	.8715, 12° 3	Schiff. G. C. I. 13, 177.
"	"	.7567, 139°	
"	"	.7571 } 139° 2	
"	"	.7572 }	Gladstone. Bei. 9, 249.
"	"	.8726, 15° 5	
"	"	.861, 24° 5	Colson. Ann. (6), 6, 86.
"	"	.8655, 20°	Brühl. A. C. P. 235, 1.
"	"	.80588, 88° 8	Taken at different pressures, each t° being the boiling point at the pressure observed. Neubeck. Z. P. C. 1, 656.
"	"	.80522, 89° 3	
"	"	.78722, 108° 3	
"	"	.78667, 108° 7	
"	"	.77483, 120° 5	
"	"	.77427, 121° 8	
"	"	.76639 } 129° 2	
"	"	.76647 }	
"	"	.75799 } 138° 1	
"	"	.75795 }	
"	"	.75658 } 139° 1	
"	"	.75685 }	
"	"	.8812, 0°	Pinette. A. C. P. 243, 50.
"	"	.7567, 138° 9	
Paraxylene	" 1.4	.8621, 19° 5	Glinzer and Fittig. A. C. P. 136, 303.
"	"	.7543 } 136° 5	Schiff. Ber. 14, 2769.
"	"	.7545 }	
"	"	.8488, 16°	Gladstone. Bei. 9, 249.
"	"	.854, 24° 5	Colson. Ann. (6), 6, 86.
"	"	.80215 } 86° 9	Taken at different pressures, each t° being the boiling point at the pressure ob- served. Neu- beck. Z. P. C. 1, 656.
"	"	.80189 }	
"	"	.78341, 106° 9	
"	"	.78310, 107° 1	
"	"	.77292, 119° 2	
"	"	.75968 } 129° 6	
"	"	.75983 }	
"	"	.75429 } 137° 1	
"	"	.75421 }	
"	"	.75306 } 138° 4	
"	"	.75303 }	
"	"	.8801, 0°	Pinette. A. C. P. 243, 50.
"	"	.7558, 138°	
Ethylbenzene	$C_6H_5 \cdot C_2H_5$	.8664, 22° 5	Fittig and König. A. C. P. 144, 277.
"	"	.8760, 9° 9	Schiff. G. C. I. 13, 177.
"	"	.7611 } 135° 8	
"	"	.7612 }	
"	"	.88316, 0°	Weger. A. C. P. 221, 61.
"	"	.7612, 136° 5	
"	"	.8673, 20°	Brühl. A. C. P. 235, 1.
Trimethylbenzene. Me- sitylene.	$C_6H_3(CH_3)_3$ 1.3.5	.863, 13°	Schwanert.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Trimethylbenzene. Me-	$C_6H_3(CH_3)_3$	.8643, 0°	Warren. J. 18, 515.
sitylene.	"	.8530, 15°	
"	"	.8694, 9°.8	Schiff. G. C. I. 13, 177.
"	"	.7372, 164°.5	
"	"	.8558, 20°	Brühl. Bei. 4, 781.
"	"	.8632, 19°	Gladstone. Bei. 9, 249.
" Pseudocumene	" 1.3.4	.8901, 0°	Konowalow. Ber. 20, ref. 570.
Orthomethylethylbenzene	$C_6H_4.CH_3.C_2H_5$ 1.2	.8731, 16°	Claus and Mann. Ber. 18, 1122.
Metamethylethylbenzene	" 1.3	.869, 20°	Wroblevsky. A. C. P. 192, 198.
Paramethylethylbenzene	" 1.4	.8694, 11°.3	Schiff. G. C. I. 13, 177.
"	"	.7393	
"	"	.7394	Anschutz. A. C. P. 235, 314.
"	"	.864, 20°	
Propylbenzene	$C_6H_5.C_3H_7$	.881, 0°	Paterno and Spica. Ber. 10, 294.
"	"	.88009, 0°	Spica. J.C.S. 36, 631.
"	"	.8692, 17°	Wispek and Zuber. A. C. P. 218, 380.
"	"	.8702, 9°.8	Schiff. G. C. I. 13, 177.
"	"	.7399, 158°.5	
Isopropylbenzene. Cu-	"	.87	Pelletier and Wal-
mene.	"	"	ter. Ann. (2), 67, 269.
"	"	.8792, 0°	Warren. J. 18, 515.
"	"	.8675, 15°	
"	"	.87976, 0°	Pisati and Paterno. J. C. S. (2), 12, 686.
"	"	.85870, 25°	
"	"	.83756, 50°	
"	"	.81585, 75°	
"	"	.79324, 100°	
"	"	.86576, 17°.5	Liebmann. Ber. 13, 46.
"	"	.8776, 0°	Two preparations. Silva. B. S. C. 43, 317.
"	"	.8577, 25°	
"	"	.87798, 0°	
"	"	.85766, 25°	
"	"	.8432, 12°	Gladstone. Bei. 9, 249.
Tetramethylbenzene	$C_6H_2(CH_3)_4$	.8816, 9°	Knublauch. Tübingen Inaug. Diss., 1872.
Dimethylethylbenzene	$C_6H_3(CH_3)_2C_2H_5$ 1.2.4.	.8783, 20°	Ernst and Fittig. A. C. P. 139, 192.
"	" 1.3.5	.8644, 20°	Jacobsen. B. S. C. 24, 73.
"	"	.861, 20°	Wroblevsky. A. C. P. 192, 217.
"	" 1.3.4	.8686, 20°	Anschutz. A. C. P. 235, 324.
Diethylbenzene	$C_6H_4(C_2H_5)_2$ 1.4	.8707, 15°.5	Fittig and König. A. C. P. 144, 285.
Metamethylpropylbenzene.	$C_6H_4.CH_3.C_3H_7$ 1.3	.863, 16°	Claus and Stuesser. Ber. 13, 899.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Metamethylpropylbenzene.	$C_6H_4 \cdot CH_3 \cdot C_3H_7$. 1.3-	.8728, 0° -----	Spica. Ber. 16, 792.
"	"	.864, 9°.8----	Schiff. G. C. I. 13, 177.
"	"	.7248, 175°.4 }	
Paramethylpropylbenzene. Cymene.	" 1.4-	.860, 14° -----	Gerhardt and Cahours. A. C. P. 38, 345.
"	"	.857, 16° -----	Noad. A. C. P. 63, 281.
"	"	.8778, 0° ---- }	Kopp. A. C. P. 94, 257.
"	"	.8678, 12°.6 }	
"	"	.8660, 15° -----	Mendelejeff. J. 13, 7.
"	"	.8664, 20° -----	Williams. J. C. S. 15, 120.
"	"	.8697, 0° ---- }	{ From cummin oil. Warren. Mem. Amer. Acad. 9, 154.
"	"	.8724, 0° ---- }	
"	"	.8592, 14° ---- }	
"	"	.8705, 0° ---- }	{ From cummin oil. Louguine. Ann. (4), 11, 453. Other values given for intermediate t°s.
"	"	.8544, 20° ---- }	
"	"	.8302, 50° ---- }	
"	"	.7893, 100° ---- }	
"	"	.8732, 0° ---- }	{ From camphor. Louguine. Ann. (4), 11, 453. Other values given for intermediate t°s.
"	"	.8574, 20° ---- }	
"	"	.8333, 50° ---- }	
"	"	.7919, 100° ---- }	
"	"	.8708, 0° -----	{ From two sources. Beilstein and Kupffer. J. C. S. (2), 12, 152.
"	"	.8572, 20°.2 }	
"	"	.8732, 0° ---- }	
"	"	.8707, 0° -----	Beilstein and Kupffer. A. C. P. 170, 295.
"	"	.86 -----	Gladstone. J. C. S. (2), 11, 699.
"	"	.8424 ----- }	{ Ext. of 8, from different sources. Gladstone. J. C. S. (2), 11, 970.
"	"	.8438 ----- }	
"	"	.858, 16° -----	Orlowsky. B. S. C. 21, 321.
"	"	.87446, 0° ---- }	{ From cummin oil. Pisati and Paterno. J. C. S. (2), 12, 686.
"	"	.85457, 25° ---- }	
"	"	.82352, 50° ---- }	
"	"	.81409, 75° ---- }	
"	"	.79307, 100° ---- }	
"	"	.87227, 0° ---- }	{ From cymylalcohol. Pisati and Paterno. J. C. S. (2), 12, 686.
"	"	.85258, 25° ---- }	
"	"	.82352, 50° ---- }	
"	"	.81209, 75° ---- }	
"	"	.79129, 100° ---- }	
"	"	.87224, 0° ---- }	{ From camphor. Pisati and Paterno. J. C. S. (2), 12, 686.
"	"	.85237, 25° ---- }	
"	"	.83251, 50° ---- }	
"	"	.81230, 75° ---- }	
"	"	.79122, 100° ---- }	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Paramethylpropylbenzene. Cymene.	$C_6H_4 \cdot CH_3 \cdot C_3H_7$ 1.4	.86542, 0° --- } .78429, 100° }	{ From thyme oil. Pisati and Paterno. J. C. S. (2), 12, 686.
"	"	.8598, 15° --- }	{ From two sources.
"	"	.8732, 0° --- }	{ Kraut. A. C. P. 192, 224.
"	"	.8595, 15° --- }	{ Jacobsen. Ber. 11, 1060.
"	"	.8718, 0° --- }	{ Febve. Ber. 14, 1720.
"	"	.86035, 10° --- }	{ Kanonnikoff. Bei. 7, 542.
"	"	.873, 0° ---	Febve. Ber. 14, 1720.
"	"	.8720, 20° ---	Kanonnikoff. Bei. 7, 542.
"	"	.7248, 176°.2	Schiff. Ber. 15, 2974.
"	"	.8569	Brühl. A. C. P. 235, 1.
"	"	.8551, 21° ---	Gladstone. J. C. S. 49, 623.
Methylisopropylbenzene	"	.86948, 0° --- }	Silva. B. S. C. 43, 317.
"	"	.86211, 25° --- }	Jacobsen. Ber. 12, 431.
"	"	.8702, 0° ---	Radziszewski. Ber. 9, 260.
Butylbenzene	$C_6H_5 \cdot C_4H_9$ ---	.8622, 16° ---	Radziszewski. Ber. 9, 260.
"	"	.875, 0° --- }	{ Balbiano. Ber. 10, 296.
"	"	.864, 15° --- }	{ Riess. Z. C. 14, 3.
"	"	.794, 99°.3	Radziszewski. Ber. 9, 260.
Isobutylbenzene	"	.8577, 16° ---	Jacobsen. B. S. C. 24, 74.
" α	"	.89, 15° --- }	{ Fittig, Köbrich, and Jilke. J. 20, 701.
" β	"	.8726, 16° --- }	{ Renard. Ann. (6), 1, 223.
Methyldiethylbenzene	$C_6H_3 \cdot C_2H_5 \cdot C_2H_5$ 1.35	.8790, 20° ---	Lippmann and Louguinine. J. 20, 667.
Dimethylpropylbenzene	$C_6H_3 (C_2H_5)_2 C_3H_7$ ---	.887, 10° ---	Dafert. M. C. 4, 617.
Laurene.			Essner. Ber. 14, 2582.
Metaethylpropylbenzene	$C_6H_4 \cdot C_2H_5 \cdot C_3H_7$ 1.3	.8588, 19° ---	Schramm. A. C. P. 218, 389.
Amylbenzene	$C_6H_5 \cdot C_5H_{11}$ ---	.8751, 0° ---	Tollens and Fittig. A. C. P. 131, 303.
"	"	.8731, 21° ---	Pabst. B. S. C. 25, 337.
"	$C_6H_5 \cdot C(CH_3)_2 \cdot C_2H_5$ ---	.8728, 0° ---	Bigot and Fittig. J. 20, 667.
"	$C_6H_5 (CH_2)_4 (CH_3)_3$ ---	.8602, 22° ---	Paterno and Spica. Ber. 10, 1746.
Isoamylbenzene	$C_6H_5 \cdot CH_2 \cdot CH_2 \cdot CH (CH_3)_2$ ---	.859, 12° ---	Schramm. A. C. P. 218, 391.
Orthoisoamylmethylbenzene.	$C_6H_4 \cdot CH_3 \cdot C_5H_{11}$ 1.2	.8945	Bigot and Fittig. J. 20, 667.
Paraisoamylmethylbenzene.	" 1.4	.8643, 9° ---	Paterno and Spica. Ber. 10, 1746.
Parapropylisopropylbenzene.	$C_6H_4 (C_3H_7)_2$ 1.4	.8713, 0° ---	Schramm. A. C. P. 218, 391.
Isohexylbenzene	$C_6H_5 \cdot C_6H_{13}$ ---	.8568, 16° ---	Bigot and Fittig. J. 20, 667.
Amyldimethylbenzene	$C_6H_3 (C_2H_5)_2 C_5H_{11}$ ---	.8951, 9° ---	Schweinitz. Ber. 19, 642.
Normal octylbenzene	$C_6H_5 \cdot C_8H_{17}$ ---	.849, 15° ---	Ahrens. Ber. 19, 2718.
"	"	.852, 14° ---	A. Austin. B. S. C. 32, 13.
Diisoamylbenzene	$C_6H_4 (C_5H_{11})_2$ ---	.8868, 0° ---	

5th. Miscellaneous Aromatic Hydrocarbons.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Allylbenzene -----	$C_6H_5 \cdot C_3H_5$ -----	.9180, 15° ----	Perkin. C. N. 36, 211.
Isopropylvinylbenzene----	$C_6H_4 \cdot C_3H_7 \cdot C_2H_3$ ----	.8902, 15° ----	" "
Isopropylallylbenzene ----	$C_6H_4 \cdot C_3H_7 \cdot C_3H_5$ ----	.890, 15° ----	" "
Isopropylbutenylbenzene----	$C_6H_4 \cdot C_3H_7 \cdot C_4H_7$ ----	.8875, 15° ----	" "
Phenylacetylene-----	$C_2H \cdot C_6H_5$ -----	.94658, 0° ----	} Weger. A. C. P. 221, 61.
"-----	"-----	.80832, 141°.6----	
"-----	"-----	.9295, 20° ----	
Ethylphenylacetylene----	$C_2 \cdot C_2H_5 \cdot C_6H_5$ ----	.923, 21° ----	Brühl. A. C. P. 235, 1.
Cinnamene. (Styrolene)---	$C_2H_3 \cdot C_6H_5$ -----	.928, 15° ----	Morgan. J. C. S. (3), 1, 163.
"	"	.924	E. Kopp. J. P. C. 37, 283.
"	"	.876	Blyth and Hofmann. A. C. P. 53, 294.
"	"	.896	} 16°-- { Scharling. A. C. P. 97, 186.
"	"	.912, 15° ----	
"	"	.911	} 0° ---- { From different sources. Krakau. Ber. 11, 1260.
"	"	.912	
"	"	.915	
"	"	.925	
"	"	.926	
"	"	.7926, 143° ----	Schiff. G. C. I. 13, 177.
"	"	.9251, 0° ----	} Weger. A. C. P. 221, 61.
"	"	.7914, 146°.2 ----	
"	"	.90595, 17° ----	Nasini and Bernheimer. G. C. I. 15, 50.
"	"	.9084	} Gladstone. J. C. S. 45, 241.
"	"	.9409, 11° ----	
"	"	.9074, 20° ----	Brühl. A. C. P. 235, 1.
Metacinnamene -----	$(C_8H_8)_n$ -----	1.054, 13° ----	Scharling. A. C. P. 97, 186.
Dicinnamene-----	$C_{16}H_{16}$ -----	1.027, 0° ----	} Erdmann. A. C. P. 216, 189.
"-----	"-----	1.016, 15° ----	
Phenylbutylene -----	$C_4H_7 \cdot C_6H_5$ -----	.9015, 15°.5----	Aronheim. B. S. C. 19, 258.
"-----	"-----	.8864, 12°.1----	Nasini. Bei. 9, 331.
Phenylpentylene -----	$C_5H_9 \cdot C_6H_5$ -----	.8458, 23° ----	Dafert. M. C. 4, 625.
Phenylisopentylene-----	"-----	.878, 16° ----	Schramm. A. C. P. 218, 394.
Tetraphenylethane -----	$C_2H_2 (C_6H_5)_4$ -----	1.179 -----	} Schröder. Ber. 14, 2516.
"-----	"-----	1.184 -----	
Phenyltolylethane-----	$C_2H_4 \cdot C_6H_5 \cdot C_7H_7$ ----	.98 -----	Bandrowski. B. S. C. 23, 79.
Ditolylethane -----	$C_2H_4 (C_7H_7)_2$ -----	.974, 20° ----	Anschütz. A. C. P. 235, 315.
Dixylylethane -----	$C_2H_4 (C_8H_9)_2$ -----	.966, 20° ----	Anschütz. A. C. P. 235, 326.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Diphenylpropane-----	$C_9 H_6 (C_6 H_5)_2$ -----	.9956, 0° }-----	Silva. Ber. 12, 2270.
“-----	“-----	.9205, 100° }-----	
Tetrahydrotoluene-----	$C_7 H_{12}$ -----	.797, 18°-----	Renard. Ann. (6), 1, 223.
Tetrahydroxylene-----	$C_8 H_{14}$ -----	.814, 0°-----	Wreden. A. C. P. 163, 337.
“-----	“-----	.8158-----	Renard. Ann. (6), 1, 223.
Hexhydrobenzene-----	$C_6 H_{12}$ -----	.76, 0°-----	Wreden. J. R. C. 5, 350.
Hexhydrotoluene-----	$C_7 H_{14}$ -----	.772, 0°-----	Wreden. Ber. 10, 713.
“-----	“-----	.758, 20°-----	
“-----	“-----	.742, 20°-----	Renard. Ann. (6), 1, 223.
“-----	“-----	.7741, 0°-----	Lossen and Zander. A. C. P. 225, 109.
“-----	“-----	.7587, 19°-----	
“-----	“-----	.6896, 96°.5 }-----	
Hexhydroxylene.	$C_8 H_{16}$ -----	.7956, 4°-----	
(B. 137°.6.)			
“ (B. 121°.5)-----	“-----	.764, 19°-----	Renard. Ann. (6), 1, 223.
Hexhydroisoxylene.	“-----	.781, 0°-----	Wreden. Ber. 10, 712.
“ (B. 118°)-----	“-----	.765, 20°-----	
“-----	“-----	.777, 0°-----	Wreden. J. C. S. (2), 12, 258.
“-----	“-----	.7814, 0°-----	Lossen and Zander. A. C. P. 225, 109.
“-----	“-----	.7665, 19°.3 }-----	
“-----	“-----	.6781, 118° }-----	
Hexhydrocumene-----	$C_9 H_{18}$ -----	.787, 20°-----	Renard. Ann. (6), 1, 223.
Hexhydropseudocumene-----	“-----	.7812, 0°-----	Konowaloff. Ber. 20, ref. 571.
“-----	“-----	.7667, 20°-----	
Hexhydrocymene-----	$C_{10} H_{20}$ -----	.8116, 17°-----	Renard. Ann. (6), 1, 223.
β. Benzylene-----	$C_7 H_6$ -----	1.106, 35°-----	Gladstone and Tribe. J. C. S. 47, 448.
Diphenyl-----	$C_{12} H_{10}$ -----	1.160-----	Schröder. Ber. 14, 2516.
“-----	“-----	1.169-----	
“-----	“-----	.9961, 70°.5-----	Schiff. A. C. P. 223, 247.
Triphenylbenzene-----	$C_6 H_3 (C_6 H_5)_3$ -----	1.205-----	Schröder. Ber. 14, 2516.
“-----	“-----	1.206-----	
Phenyltoluene-----	$C_6 H_4 \cdot CH_3 \cdot C_6 H_5$. 1.4	1.015, 27°-----	Carnelley. J. C. S. (2), 14, 18.
Benzylethylbenzene-----	$C_6 H_4 \cdot C_2 H_5 \cdot C_7 H_7$. 1.4	.985, 18°.9-----	Walker. Ber. 5, 686.
Metabenzyltoluene-----	$C_6 H_4 \cdot CH_3 \cdot C_7 H_7$. 1.3	.997, 17°.5-----	Senff. A. C. P. 220, 223.
Parabenzyltoluene-----	“ 1.4	.995, 17°.5-----	Zincke. A. C. P. 161, 93.
Dibenzyltoluene-----	$C_6 H_3 \cdot C H_3 (C_7 H_7)_2$ -----	1.049-----	Weber and Zincke. J. C. S. (2), 13, 155.
Phenylxylene-----	$C_6 H_3 (C H_3)_2 C_6 H_5$ -----	1.01, 0°-----	Barbier. J. C. S. (2), 13, 62.
Benzylcymene-----	$C_{10} H_{13} \cdot C_7 H_7$ -----	.987, 0°-----	Mazzara. Ber. 12, 384.
Dipentenylbenzene-----	$C_{22} H_{28}$ -----	.9601, 23°-----	Dafert. M. C. 4, 625.
Benzylidenetolylene ?-----	$C_{14} H_{12}$ -----	1.0032, 18°-----	Lippmann. Ber. 19, ref. 744.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ditolyl -----	$C_{14} H_{14}$ -----	.9172, 121° ---	Schiff. A. C. P. 223, 247.
Dibenzyl -----	" -----	1.002, 14° ---	Limpricht. J. 19, 593.
" -----	" -----	.9945, 10°.5 ---	Fittig. A. C. P. 139, 178.
" -----	" -----	1.0423, 52°.3 ---	Schiff. A. C. P. 223, 247.
Dixylylene -----	$C_{16} H_{16}$ -----	.9984, 22° ---	Lippmann. Ber. 19, ref. 744.
Naphthalene. l. -----	$C_{10} H_8$ -----	.9774, 79°.2 ---	Kopp. A. C. P. 95, 307.
" " -----	" -----	.9628, 99°.2 ---	Alluard. J. 12, 472.
" s. -----	" -----	1.15173, 19° ---	Vohl.
" " -----	" -----	1.153, 18° ---	Watts' Dictionary.
" " -----	" -----	1.048 -----	Ure. Gm. H.
" " -----	" -----	1.321 } 4° --- {	Schröder. Ber. 12, 1611.
" " -----	" -----	1.341 } 4° --- {	
" l. -----	" -----	.8779, 218° ---	Ramsay. J. C. S. 39, 65.
" " -----	" -----	.9777, 79°.2 ---	Schiff. A. C. P. 223, 247.
" " -----	" -----	.982, 79° --- } 4° --- {	Lossen and Zander. A. C. P. 225, 109.
" " -----	" -----	.8674, 217°.1 } 4° --- {	
" " -----	" -----	.96208, 98°.4 ---	Nasini and Bernheimer. G. C. I. 15, 50.
Methylnaphthalene -----	$C_{10} H_7. C H_3$ -----	1.0287, 11°.5 ---	Fittig and Remsen. A. C. P. 155, 114.
" -----	" -----	1.0042, 22° ---	Reingruber. A. C. P. 206, 376.
Dimethylnaphthalene -----	$C_{10} H_6 (C H_3)_2$ -----	1.0176, 20° ---	Giovanozzi. J. C. S. 42, 853.
" -----	" -----	1.0283, 0° --- } 4° --- {	Cannizzaro and Cernelutti. J. C. S. 44, 80.
" -----	" -----	1.10199, 12° --- } 4° --- {	
" -----	" -----	1.01803, 16°.4 --- } 4° --- {	Nasini and Bernheimer. G. C. I. 15, 50.
" -----	" -----	1.01058, 27°.7 --- } 4° --- {	
" -----	" -----	.97411, 77°.7 --- } 4° --- {	
Ethylnaphthalene -----	$C_{10} H_7. C_2 H_5$ -----	1.0184, 10° ---	Fittig and Remsen. A. C. P. 155, 118.
" -----	" -----	1.0204, 0° --- } 4° --- {	Cernelutti. Ber. 13, 1672.
" -----	" -----	1.0123, 11°.9 --- } 4° --- {	
Isopropylnaphthalene -----	$C_{10} H_7. C_3 H_7$ -----	.990, 0° -----	Roux. Ann. (6), 12, 319.
Amylnaphthalene -----	$C_{10} H_7. C_5 H_{11}$ -----	.973, 0° -----	Roux. Ann. (6), 12, 321.
Naphthalene tetrahydride	$C_{10} H_8. H_4$ -----	.981, 12° -----	Graebe. B. S. C. 18, 205.
" " -----	" -----	.995, 0° -----	Wreden and Znato-wicz. Ber. 9, 1607.
Naphthalene hexhydride	$C_{10} H_8. H_6$ -----	.952, 0° -----	" "
" " -----	" -----	.9419, 0° ----- } 4° --- {	Lossen and Zander. A. C. P. 225, 109.
" " -----	" -----	.7809, 200° ----- } 4° --- {	
" " -----	" -----	.94887, 16°.4 --- } 4° --- {	Nasini and Bernheimer. Two samples. G. C. I. 15, 50.
" " -----	" -----	.95807, 18°.4 --- } 4° --- {	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Naphthalene octohydride	$C_{10}H_8 \cdot H_8$	.910, 0°	Wreden and Znato- wicz. Ber. 9, 1607.
Naphthalene decahydride	$C_{10}H_8 \cdot H_{10}$	.857, 0°	" "
Naphthalene dodecahy- dride.	$C_{10}H_8 \cdot H_{12}$	.802, 0°	" "
Dimethylnaphthalene hexhydride.	$C_{12}H_{12} \cdot H_6$	.92194, 19°.8	Nasini and Bern- heimer. G. C. I. 15, 50.
α . Benzyl-naphthalene	$C_{10}H_7 \cdot C_7H_7$	1.166	Miquel. Ber. 9, 1034.
"	"	1.165, 0°	Vincent and Roux. B. S. C. 40, 163.
β . Benzyl-naphthalene	"	1.176, 0°	" "
Acenaphtene	$C_{10}H_6 \cdot C_2H_4$	1.0390, 103°	Schiff. A. C. P. 223, 247.
Anthracene	$C_{14}H_{10}$	1.147	Reichenbach. Watts' Dict.
Phenanthrene	"	1.0630, 100°.5	Schiff. A. C. P. 223, 247.
Phenanthrene tetrahy- dride.	$C_{14}H_{10} \cdot H_4$	1.067, 10°.2	Graebe. J. C. S. (2), 14, 70.
Stilbene	$C_{14}H_{12}$	.9707, 119°.2	Schiff. A. C. P. 223, 247.
Retene. Solid	$C_{18}H_{18}$	1.104	Ekstrand. A. C. P. 185, 78.
" "	"	1.110	
" "	"	1.132	
" "	"	1.152	
" "	"	1.162	
" Fused	"	1.063	
" "	"	1.067	
" "	"	1.074	
" "	"	1.077	
" "	"	1.087	
" "	"	1.093	

6th. Terpenes.

NAME.	FORMULA.	SP. GRAVITY	AUTHORITY.
Oil of turpentine	$C_{10}H_{16}$	.8902, 0°	Frankenheim. J. 1, 68.
" "	"	.8555	Four different sam- ples. Gladstone. J. C. S. 17, 1.
" "	"	.8600	
" "	"	.8614	
" "	"	.8644	
" " B. 168°.2	"	.7283, 168°.2	Schiff. Bei. 9, 559.
From Abies Reginae-Ama- liae.	"	.868	Buchner and Theil. J. 17, 536.
From Pinus abies	"	.856, 20°	Wöhler. Gm. H.
" " "	"	.880, 15°	Blanchet and Sell. Gm. H.
From Pinus maritima	"	.864, 16°	Berthelot. J. 6, 519.
" " " B. 179°.3	"	.8639, 0°	Flawitzky. Ber. 12, 2357.
" " "	"	.8486, 20°	
From Pinus picea	"	.859, 6°	Flückiger. J. 8, 643.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
From Pinus pumilio-----	$C_{10}H_{16}$ -----	.875, 17°-----	Buchner. J. 13, 479.
From Pinus sylvestris.	"-----	.86529, 15°-----	Tilden. J. C. S. 33, 80.
" " " B. 171°.	"-----	.8746, 0°-----	Flawitzky. Ber. 11, 1846.
" " " " B. 156°.	"-----	.8621, 16°-----	
" " " " "	"-----	.8547, 24°.5-----	
" " " " "	"-----	.8764, 0°-----	
" " " " "	"-----	.8600, 20°-----	Flawitzky. Ber. 20, 1956.
Terpene ?-----	"-----	.7421 } 156°.1	{ Schiff. G. C. I. 13, 177.
" " " " "	"-----	.7422 }	
" ?-----	"-----	.8587, 20°-----	Kanonnikoff. Bei. 7, 592.
" " " " "	"-----	.8711, 10°.2-----	Gladstone. J. C. S. 49, 623.
Isoterpene-----	"-----	.8443, 20°-----	Kanonnikoff. Bei. 7, 592.
" " " " "	"-----	.8627, 0°-----	Flawitzky. Ber. 20, 1961.
" " " " "	"-----	.8480, 20°-----	
Thuja terpene. B. 160°-----	"-----	.852, 15°-----	Jahns. Ber. 16, 2930.
From Sequoia. B. 155°-----	"-----	.8522, 15°-----	Lunge and Steinkauler. Ber. 14, 2204.
Terebilene. B. 134°-----	"-----	.843-----	Watts' Dictionary.
Australene. B. 157°-----	"-----	.8631, 16°-----	Atterberg. Ber. 10, 1203.
Terebenthene. B. 157°-----	"-----	.871, 17°.5-----	Atterberg. Ber. 14, 2531.
" " " " "	"-----	.8767, 0°-----	Riban. B. S. C. 21, 173.
" " " " "	"-----	.8601, 20°-----	
" " " " "	"-----	.8436, 40°-----	
" " " " "	"-----	.8270, 60°-----	
" " " " "	"-----	.8105, 80°-----	
" " " " "	"-----	.7939, 100°-----	
" " " " "	"-----	.8812, 0°-----	Barbier. C. R. 96, 1066.
" " " " "	"-----	.8815, 0°-----	
" " " " "	"-----	.8724, 12°-----	
" From camphor oil.	"-----	.8641, 15°-----	Yoshida. J. C. S. 47, 779.
Terebene-----	"-----	.8718-----	Pierre. J. 4, 52.
" " " " "	"-----	.8645, 5°-10°-----	Regnault. P. A. 62, 50.
" " " " "	"-----	.8605, 10°-15°-----	
" " " " "	"-----	.8564, 15°-20°-----	
" B. 160°-----	"-----	.8583, 20°-----	Gladstone. J. C. S. 17, 1.
" " " " "	"-----	.8767, 0°-----	Riban. B. S. C. 21, 173.
" " " " "	"-----	.8600, 20°-----	
" " " " "	"-----	.8433, 40°-----	
" " " " "	"-----	.8267, 60°-----	
" " " " "	"-----	.8100, 80°-----	
" " " " "	"-----	.7933, 100°-----	
" B. 156°-----	"-----	.8264, 15°-----	Orlowsky. B. S. C. 21, 321.
Isoterebenthene. B. 175°-----	"-----	.8432, 22°-----	Berthelot. J. 6, 523.
" " " " "	"-----	.8586, 0°-----	Riban. C. R. 79, 314.
" " " " "	"-----	.8427, 20°.28-----	
" " " " "	"-----	.8273, 40°.19-----	
" " " " "	"-----	.8131, 58°.32-----	
" " " " "	"-----	.7964, 79°.24-----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Isoterebenthene -----	$C_{10}H_{16}$ -----	.7793, 100° -----	Riban. C. R. 79, 314.
Terpilene. Laevorotatory-----	"-----	.8672, 0° -----	Bouchardat and Lafont. C. R. 102, 50.
Terpinylene. B. 177° -----	"-----	.8526, 15° -----	Tilden. C. N. 37, 166.
Terpinene. B. 178 -----	"-----	.93, 0° -----	Walitzky. Ber. 15, 1086.
"-----	"-----	.855 -----	Wallach. A. C. P. 230, 260.
Sylvestrene. B. 175°-----	"-----	.8612, 16° -----	Atterberg. Ber. 10, 1206.
"-----	"-----	.8598, 17°.5-----	Atterberg. Ber. 14, 2531.
"-----	"-----	.8658, 14° -----	Gladstone. Bei. 9, 249.
Austrapyrolene. B. 177°-----	"-----	.847 -----	Watts' Dictionary.
From oil of neroli. B. 173°-----	"-----	.8466, 20° -----	Gladstone. J. C. S. 17, 1.
From oil of orange -----	"-----	.835 -----	Soubeiran and Capitaine.
" " " B. 174°-----	"-----	.8460 } 20° {	Gladstone. J. C. S. 17, 1.
" " "-----	"-----	.8468 }-----	" "
From oil of petit grain-----	"-----	.8470, 20° -----	Luca. J. 13, 479.
From Citrus lumia -----	"-----	.853, 18° -----	Luca. C. R. 45, 904.
From Citrus bigaradia -----	"-----	.8520, 10° }-----	Berthelot. J. 6, 521.
" " "-----	"-----	.8517, 12° }-----	Gladstone. J. C. S. 17, 1.
From Citrus medica -----	"-----	.8514, 15° -----	
" " "-----	"-----	.8466, 20° -----	
Oil of citron-----	"-----	.8597, 5°—10°-----	} Regnault. P. A. 62, 50.
" "-----	"-----	.8558, 10°—15°-----	
" "-----	"-----	.8518, 15°—20°-----	
Citron terpene -----	"-----	.8593 } 9°.9 {	} Schiff. Ber. 19, 560.
" "-----	"-----	.8595 }-----	
" "-----	"-----	.7279 }-----	
" "-----	"-----	.7285 } 168° {	
" "-----	"-----	.7286 }-----	
From oil of lemon-----	"-----	.84 }-----	} Zeller. Watts' Dict.
" " "-----	"-----	.86 }-----	
" " "-----	"-----	.8380 } 0°-- {	} Frankenheim. Two samples. J. 1, 68.
" " "-----	"-----	.8661 }-----	
" " " B. 173°-----	"-----	.8468, 20° -----	Gladstone. J. C. S. 17, 1.
Citrene. B. 165°-----	"-----	.8569 -----	Blanchet and Sell. Gm. H.
From oil of bergamot -----	"-----	.856 -----	Ohme. A. C. P. 31, 316.
" " "-----	"-----	.8464 } 20° {	} Gladstone. J. C. S. 17, 1.
" " "-----	"-----	.8466 }-----	
Hesperidene-----	"-----	.8483 -----	Gladstone. Bei. 9, 249.
From oil of angelica -----	"-----	.8487 -----	Müller. Ber. 14, 2483.
" " " B. 175°-----	"-----	.833, 0° -----	Naudin. Ber. 15, 254.
" " " B. 158°-----	"-----	.8609 } 16°.5 {	} Beilstein and Wiegand. Ber. 15, 1741.
" " " B. 173°-----	"-----	.8504 }-----	
" " " B. 176°-----	"-----	.8481 }-----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
β Terebangeline. B. 166--	$C_{10}H_{16}$ -----	.870, 0°-----	Naudin. C. R. 96, 1153.
From oil of anise-----	"-----	.8580, 20°-----	Gladstone. J. C. S. 17, 1.
From oil of bay-----	"-----	.908, 15°-----	Blas. J. 18, 569.
" " "-----	"-----	.8508, 20°-----	Gladstone. J. C. S. 17, 1.
From oil of birch tar-----	"-----	.870, 20°-----	Sobrero. Watts' Dict.
From oil of calamus-----	"-----	.8793, 0°-----	Kurbatow. A. C. P. 173, 1.
From oil of camphor-----	"-----	.8733, 20°-----	Yoshida. J. C. S. 47, 779.
From oil of caraway-----	"-----	.8466, 20°-----	Gladstone. J. C. S. 17, 1.
Carvene-----	"-----	.861, 15°-----	Völckel. J. 6, 512.
"-----	"-----	.8530 } 20° {	Gladstone. J. C. S. 17, 1.
"-----	"-----	.8545 } 20° {	
"-----	"-----	.8530, 9°.8-----	
"-----	"-----	.7127 } 186°.5 {	Schiff. G. C. I. 13, 177.
"-----	"-----	.7132 } 186°.5 {	
"-----	"-----	.7133 } 186°.5 {	
"-----	"-----	.8529, 20°-----	Kanonnikoff. Bei. 7, 592.
"-----	"-----	.849, 15°-----	Flückiger. Ber. 17, ref. 358.
From oil of cascarilla-----	"-----	.8467, 20°-----	Gladstone. J. C. S. 17, 1.
From oil of copal-----	"-----	.951, 10°-----	Schibler. J. 12, 516.
From oil of cummin-----	"-----	.8772, 0°-----	Warren. J. 18, 515.
" " "-----	"-----	.8657, 15°-----	
From oil of dill-----	"-----	.8467, 20°-----	Gladstone. J. C. S. 17, 1.
From oil of elder-----	"-----	.8468, 20°-----	" "
From elemi-----	"-----	.849, 11°-----	Deville. J. 2, 448.
" "-----	"-----	.852, 24°-----	Stenhouse. A. C. P. 35, 304.
From oil of erechthidis--	"-----	.8380, 18°.5-----	Beilstein and Wiegand. Ber. 15, 2854.
From oil of Erigeron canadense.	"-----	.8464, 18°-----	" "
From Eucalyptus amygdalina.	"-----	.8642, 20°-----	Gladstone. J. C. S. 17, 1.
From oil galbanum-----	"-----	.8842, 9°-----	Mössmer. J. 14, 687.
From Illicium religiosum--	"-----	.855-----	Eykman. Ber. 14, 1721.
From kauri gum-----	"-----	.863, 18°-----	Rennie. Ber. 14, 1719.
From laurel turpentine--	"-----	.8618, 20°-----	Gladstone. J. C. S. 20, 1.
From oil of marjoram--	"-----	.8463, 18°.5-----	Beilstein and Wiegand. Ber. 15, 2854.
From oil of mint-----	"-----	.8600, 20°-----	Gladstone. J. C. S. 17, 1.
" "-----	"-----	.8646, 17°.3-----	Gladstone. J. C. S. 49, 623.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
From oil of peppermint	$C_{10}H_{16}$	.8602, 20°	Gladstone. J. C. S. 17, 1.
From menthol. B. 168.°6	"	.8254, 0°	Atkinson and Yoshida. J. C. S. 41, 49.
" " "	"	.8178, 10°	
" " "	"	.8111, 20°	
" " "	"	.8001, 40°	
" " "	"	.7924, 60°	
From oil of myrtle	"	.8690, 20°	Gladstone. J. C. S. 17, 1.
From oil of nutmeg	"	.8518	" "
" " " B. 167°	"	.8527	
" " " B. 164°	"	.8454, 25°	Gladstone. Bei. 9, 249.
" " " B. 178°	"	.8480, 27°	
From oil of parsley	"	.8732, 20°	Gladstone. J. C. S. 17, 1.
From oil of parsnip	"	.865, 12°	Gerichten. Ber. 9, 259.
From Ptychotis ajowan	"	.854, 12°	Stenhouse. J. 9, 624.
From oil of rosemary	"	.8805, 20°	Gladstone. J. C. S. 17, 1.
From oil of sage. B. 155°	"	.8635*	Three isomers. Sigura and Muir. J. C. S. 33, 292.
" " " B. 167°	"	.8866	
" " " B. 165°	"	.8653	
" " " B. 170°	"	.8653	
" " " "	"	.8667	
" " " "	"	.8632, 24°.5	Gladstone. J. C. S. 49, 623.
From Satureja hortensis	"	.855, 15°	Jahns. Ber. 15, 819.
From oil of thyme	"	.8635, 20°	Gladstone. J. C. S. 17, 1.
Thymene	"	.868, 20°	Lallemand. J. 9, 616.
"	"	.8635, 20°	Kanonnikoff. Bei. 7, 592.
From oil of wormwood	"	.8565, 20°	Gladstone. J. C. S. 17, 1.
Cajeputene. B. 165°	"	.850, 15°	Schmidl. J. 13, 481.
Isocajeputene. B. 177°	"	.857, 16°	Schmidl. J. 13, 482.
Camphene	"	.8481, 47°.7	Riban. B. S. C. 24, 9.
"	"	.8387, 58°.9	
"	"	.8211, 79°.7	
"	"	.8062, 97°.7	
"	"	.8345, 99°.84	Spitzer. Ber. 11, 1815.
Camphilene	"	.87	Watts' Dictionary.
Caoutchin	"	.855, 0°	Bouchardat. B. S. C. 24, 109.
"	"	.842, 20°	
"	"	.842, 20°	Williams. J. 13, 495.
Cicutene	"	.87038, 18°	Van Ankum. J. 21, 794.
Cinaëbene	"	.878	Hirzel. J. 7, 592.
Cynene. B. 174°.5	"	.825, 16°	Völckel. A. C. P. 89, 358.
"	"	.8500, 15°	Hell and Stürcke. Ber. 17, 1972.
"	"	.8238, 50°	
"	"	.7851, 100°	

* Misprinted 0.8435. Corrected in later paper.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Cynene. B. 182°	$C_{10}H_{16}$	.85384, 16°	Wallach and Brass. A. C. P. 225, 291.
From cyneol. B. 179°	"	.85652 }	" "
" "	"	.85959 }	
Fellandrene	"	.8558, 10°	Pesci. G. C. I. 16, 225.
Gaultherilene	"	.8510, 20°	Gladstone. J. C. S. 17, 1.
Geraniene	"	.842 }	Jacobsen. Z. C. 14, 171.
"	"	.843 }	
Licarene	"	.835, 18°	Morin. J. C. S. 42, 737.
Macene	"	.8529, 17°.5	Schacht. J. 15, 461.
Olibene	"	.863, 12°	Kurbatow. Z. C. 14, 201.
Safrene	"	.8345, 0°	Grimaux and Rutotte. J. 22, 783.
Tolene	"	.858, 10°	E. Kopp. J. 1, 737.
Polymer of isoprene	"	.866, 0°	Bouchardat. Ber. 8, 904.
" "	"	.854, 21°	
Polymer of valerylene	"	.836, 15°	" "
From oil of calamus	$C_{15}H_{24}$	.9180 }	Gladstone. J. C. S. 17, 1.
" " "	"	.9275 }	
" " "	"	.942, 0°	Kurbatow. A. C. P. 173, 1.
From oil of cascarilla	"	.9212, 20°	Gladstone. J. C. S. 17, 1.
From oil of cedar	"	.9231, 18°	Gladstone. Bei. 9, 249.
From oil of cloves	"	.918, 18°	Ettling. Watts' Diet.
" " "	"	.9016, 14°	Williams. J. 11, 442.
" " "	"	.9041, 20°	Gladstone. J. C. S. 17, 1.
" " "	"	.905, 15°	Church. J. C. S. (2), 13, 115.
From oil of copaiva	"	.91	Posselt. J. 2, 455.
" " "	"	.881	Soubeiran and Capitaine. Gm. H.
" " "	"	.885	
" " "	"	.8978, 24°	Levy. Ber. 18, 3206.
From oil of cubebs	"	.915 }	Schmidt.
" " "	"	.930 }	
" " "	"	.938 }	
" " "	"	.9062, 20°	Gladstone. J. C. S. 17, 1.
" " "	"	.9289, 0°	Oglialore. Ber. 8, 1357.
Cedrene	"	.984, 14°.5	Walter. Ann. (3), 1, 501.
"	"	.915, 15°	Muir. J. C. S. 37, 13.
"	"	.9231, 18°	Gladstone. J. C. S. (2), 10, 1.
From Drybalanops camphora.	"	.900 }	Lallemand. J. 12, 503.
" " "	"	.921 }	
From gurgun balsam	"	.9044, 15°	Werner. J. 15, 461.
From oil of hemp	"	.9292, 0°	Valente. J. C. S. 40, 284.
From Laurus nobilis	"	.925, 15°	Blas. J. 18, 569.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
From <i>Ledum palustre</i> -----	$C_{15}H_{24}$ -----	.9349, 0°-----	Rizza. Ber. 20, ref. 562.
“ “ “-----	“-----	.9237, 19°-----	
From maracaibo balsam-----	“-----	.921, 10°-----	Strauss. J. 21, 795.
Metatemplene-----	“-----	1.037, 4°-----	Flückiger. J. 8, 646.
From <i>Myrtus pimenta</i> -----	“-----	.98, 8°-----	Oeser. J. 17, 534.
From oil of patchouli-----	“-----	.9211-----	Gladstone. J. C. S. 17, 1.
“ “ “-----	“-----	.9255-----	
“ “ “-----	“-----	.9278-----	
“ “ “-----	“-----	.946, 0°-----	Montgolfier. Ber. 10, 234.
“ “ “-----	“-----	.937, 13°.5-----	
From oil of rosewood-----	“-----	.9042, 20°-----	Gladstone. J. C. S. 17, 1.
From oil of sage-----	“-----	.9198, 0°-----	Sigiura and Muir. J. C. S. 33, 297.
“ “-----	“-----	.9137, 12°-----	
“ “-----	“-----	.9072, 24°-----	
“ “-----	“-----	.8970, 41°-----	
From oil of sandal wood-----	“-----	.9190-----	Gladstone. J. C. S. (2), 10, 1.
Sesquiterpene-----	“-----	.921, 16°-----	Wallach. A. C. P. 238, 85.
From oil of vitivert-----	“-----	.9332-----	Gladstone. J. C. S. (2), 10, 1.
From copaiva oil-----	$C_{20}H_{32}$ -----	.892, 17°-----	Brix. Ber. 14, 2267.
From minjak-lagam oil-----	“-----	.923, 15°-----	Haussner. Ber. 16, 1387.
From oil of poplar-----	“-----	.9002-----	Piccard. C. C. (3), 6, 4.
From tar-cumene-----	“ ?-----	.8850, 22°-----	Jacobsen. A. C. P. 184, 203.
Diterebene-----	“-----	.94-----	Watts' Dictionary.
Metaterebenthene-----	“-----	.913, 20°-----	Berthelot. J. 6, 524.
Colophene-----	“-----	.9391, 20°-----	Gladstone. J. C. S. 17, 1.
“-----	“-----	.94, 9°-----	Déville. P. A. 51, 439.
Difellandrene-----	“-----	.9523, 10°-----	Pesci. G. C. I. 16, 225.
Heveéne-----	“-----	.921, 21°-----	Bouchardat. A. C. P. 37, 30.
Tetraterebenthene-----	$C_{40}H_{64}$?-----	.977, 0°-----	Riban. C. R. 79, 391.

7th. Unclassified Hydrocarbons.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Heptanaphtene*-----	$C_7 H_{14}$ -----	.7778, 0°-----	Milkowsky. Ber. 18, ref. 186.
“-----	“-----	.7624, 17°.5-----	
Octonaphtene-----	$C_8 H_{16}$ -----	.7649, 0°-----	Markownikoff. Ber. 18, ref. 186.
“-----	“-----	.7503, 18°-----	
Isooctonaphtene-----	“-----	.7765 } 0°-----	Putochin. Ber. 18, ref. 186.
“-----	“-----	.7768 }-----	
“-----	“-----	.7637, 17°.5-----	
Nononaphtene-----	$C_9 H_{18}$ -----	.7808, 0°-----	Markownikoff and Ogloblin. Ber. 16, 1877.
“-----	“-----	.7808, 0°-----	
“-----	“-----	.7652, 26°-----	Konowaloff. Ber. 18, ref. 186.
Dekanaphtene-----	$C_{10} H_{20}$ -----	.795, 0°-----	
Endekanaphtene-----	$C_{11} H_{22}$ -----	.8119, 0°-----	“-----
Dodekanaphtene-----	$C_{12} H_{24}$ -----	.8055, 14°-----	“-----
Tetradekanaphtene-----	$C_{14} H_{28}$ -----	.8390, 0°-----	“-----
Pentadekanaphtene-----	$C_{15} H_{30}$ -----	.8294, 17°-----	“-----
Nononaphtylene-----	$C_9 H_{16}$ -----	.8068, 0°-----	Konowaloff. Ber. 18, ref. 186.
Menthene-----	$C_{10} H_{18}$ -----	.851, 21°-----	Walter. A. C. P. 32, 288.
“-----	“-----	.814, 15°-----	Moriya. J. C. S., March, 1881.
“-----	“-----	.8226, 0°-----	Atkinson and Yo- shida. J. C. S. 41, 49.
“-----	“-----	.8145, 10°-----	
“-----	“-----	.8073, 20°-----	
“-----	“-----	.7909, 40°-----	
“-----	“-----	.7761, 60°-----	
From oil of calamus-----	“-----	.8793, 0°-----	Kurbatow. J. C. S. (2), 12, 259.
From turpentine chlorhy- drate.	“-----	.852, 19°-----	Montgolfier. Ber. 12, 376.
Cymhydrene-----	$C_{10} H_{20}$ -----	.8046, 12°-----	Gladstone. J. C. S. 49, 616.
Terpilene hydride-----	“-----	.8179, 0°-----	Montgolfier. C. R. 89, 103.
“-----	“-----	.8060, 17°.5-----	
Ethyl camphene-----	$C_{10} H_{15} \cdot C_2 H_5$ -----	.8709, 20°-----	Spitzer. Ber. 11, 1817.
Isobutyl camphene-----	$C_{10} H_{15} \cdot C_4 H_9$ -----	.8614, 20°-----	Spitzer. Ber. 11, 1818.
Camphin-----	$C_{18} H_{32}$ -----	.827, 25°-----	Claus. J. P. C. 25, 269.
Diterebenthyl-----	$C_{20} H_{30}$ -----	.9688, 18°-----	Renard. C. R. 105, 866.
Diterebenthylene-----	$C_{20} H_{28}$ -----	.9821, 12°-----	Renard. C. R. 106, 856.
Dicamphene hydride-----	$C_{20} H_{34}$ -----	.9574, 19°-----	Montgolfier. C. R. 87, 840.

* According to Konowaloff, the “naphtenes” are identical with the hexhydrides of the benzene series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Didecene -----	$C_{20} H_{36}$ -----	.9362, 12° ----	Renard. C. R. 106, 1086.
Caoutchene -----	$C_4 H_8$ -----	.65, —2° ----	Bouchardat. A. C. P. 37, 30.
Tropilidene -----	$C_7 H_8$ -----	.9129, 0° ----	Ladenburg. A. C. P. 217, 133.
From copper camphorate -----	$C_8 H_{14}$ -----	.793 -----	Moitessier. J. 19, 410.
From decomposition of phenol. -----	$C_{10} H_{12}$ -----	1.012, 17°.5, s. -----	Roscoe. J. C. S. 47, 669.
Eucalyptene -----	$C_{12} H_{18}$ -----	.836, 12° ----	Cloëz. J. 23, 588.
Anthemene -----	$C_{18} H_{36}$ -----	.942, 15° ----	Naudin. B. S. C. 41, 483.
Paranicene -----	$C_{10} H_{12}$ -----	1.24 -----	St. Evre. J. 1, 532.
Lekene -----	?	.93917 -----	Beilstein and Wiegand. Ber. 16, 1548.
Könlite -----	$(C_6 H_6)_n$ -----	.88 -----	Trommsdorf. A. C. P. 21, 126.
Hartite -----	$(C_3 H_5)_n$ -----	1.046 -----	Haidinger. P. A. 54, 261.
From petroleum -----	$(C_7 H_4)_n$ -----	1.096, 15° ----	Prunier. Ann. (5), 17, 5.
Carbopetrocene -----	$(C_{10} H_2)_n$ or $(C_{12} H_2)_n$ -----	1.235, 10° ----	" "

XLVI. COMPOUNDS CONTAINING C, H, AND O.

1st. Alcohols of the Paraffin Series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl alcohol -----	$C H_4 O$ -----	.798, 20° ----	Dumas and Peligot. Ann. (2), 58, 5.
" " -----	" -----	.807, 9° ----	Deville.
" " -----	" -----	.813 -----	Regnault.
" " -----	" -----	.82704, 0° ----	Pierre. Ann. (3), 15, 325.
" " -----	" -----	.7938, 25° ----	Kopp. A. C. P. 55, 166.
" " -----	" -----	.81796, 0° -- }	Kopp. P. A. 72, 53.
" " -----	" -----	.80307, 16°.9 }	
" " -----	" -----	.8065, 15° ----	Mendelejeff. J. 13, 7.
" " -----	" -----	.8052, 9°.5 ----	Delffs. J. 7, 26.
" " -----	" -----	.8142, 0° -- }	Kopp. A. C. P. 94, 257.
" " -----	" -----	.7997, 16°.4 }	
" " -----	" -----	.7973, 15° ----	Graham.
" " -----	" -----	.7995, 15° ----	Duclaux. Ann. (5), 13, 86.
" " -----	" -----	.8574, 21° ----	Linnemann. J. 21, 681.
" " -----	" -----	.81571, 10° ----	Dupré. P. A. 148, 236.
" " -----	" -----	.7964, 20° ----	Landolt.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl alcohol	$\text{C H}_4 \text{O}$	.7997, 15°	Grodzki and Krämer. Z. A. C. 14, 103.
" "	"	.7984, 15°	Krämer and Grodzki. Ber. 9, 1929.
" "	"	.8098, 0°	Vincent and Delachanal. J. 1880, 396.
" "	"	.8014, 14°	De Heen. Bei. 5, 105.
" "	"	.7475 } 61°.8	{ Schiff. G. C. I. 13, 177.
" "	"	.7477 }	
" "	"	.7953, 20°	Brühl. Bei. 4, 781.
" "	"	.8111, 0°	Zander. A. C. P. 224, 88.
" "	"	.7483, 66°.2	
" "	"	.810, 15°	Regnault and Villejean. C. R. 99, 82.
" "	"	.7961, 18°	Gladstone. Bei. 9, 249.
" "	"	.7923, 20°	Winkelmann. P. A. (2), 26, 105.
" "	"	.7931, 20°	Traube. Ber. 19, 879.
" "	"	.8612, 0°	Pagliani and Battelli. Bei. 10, 222.
" "	"	.78909, 22°.94	} Values given for every 10° from 80° to 238°.5. Ramsay and Young. P. T. 178, 313.
" "	"	.7135, 100°	
" "	"	.6494, 150°	
" "	"	.5525, 200°	
" "	"	.3642, 238°.5	
Ethyl alcohol*	$\text{C}_2 \text{H}_6 \text{O}$	.7924, 17°.9	Gay Lussac.
" "	"	.7915, 18°	Dumas and Boullay. P. A. 12, 93.
" "	"	.8095, 0°	Darling.
" "	"	.7996, 15°	Kopp. A. C. P. 55, 166.
" "	"	.8150, 5°—10°	} Regnault. P. A. 62, 50.
" "	"	.8113, 10°—15°	
" "	"	.8072, 15°—20°	
" "	"	.81087 } 0°	} Kopp. P. A. 72, 62,
" "	"	.8095 }	
" "	"	.79821, 14°	
" "	"	.7990, 14°.8	
" "	"	.8151, 0°	Pierre. Ann. (3), 15, 325.
" "	"	.7938, 15°.5	Fownes. P. T. 1847, 249.
" "	"	.7897 } 21°	{ Wackenroder. J. 1, 682.
" "	"	.7905 }	
" "	"	.79381, 15°.6	Drinkwater. J. 1, 682.
" "	"	.809, 5°	Delffs. J. 7, 26.
" "	"	.8194, 19°	Wetherill. J. P. C. 60, 202.
" "	"	.7947, 15°	Pouillet. J. 12, 439.
" "	"	.7958, 15°	Mendelejeff. J. 13, 7.
" "	"	.8083, 0°	} Mendelejeff. J. 14, 20.
" "	"	.7157, 99°.9	

* For this compound there are so many determinations of specific gravity that absolute completeness with regard to them has not been attempted by the compiler.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethyl alcohol	C_2H_6O	.6796, 130°.9	Mendelejeff. J. 14, 20.
"	"	.7946 } 15° {	Baumhauer. J. 13, 393.
"	"	.7947 } {	
"	"	.80625, 0°	
"	"	.80207, 5°	
"	"	.79788, 10°	Mendelejeff. J. 18, 469.
"	"	.79367, 15°	
"	"	.78945, 20°	
"	"	.78522, 25°	
"	"	.78096, 30°	Linnemann. J. 21, 413.
"	"	.8086, 19°	
"	"	.8090, 17°	Linnemann. A.C.P. 160, 195.
"	"	.822, 20°	Pierre and Puchot. Ann. (4), 22, 260.
"	"	.79481, 11°	Erlenmeyer. A.C.P. 162, 374.
"	"	.815, 0° 5°	Pierre. C. N. 27, 93.
"	"	.80214, 1	
"	"	.7946, 16°.03	Winkelmann. P. A. 150, 592.
"	"	.7339, 78°	Ramsay. J. C. S. 35, 463.
"	"	.8120, 0°	Vincent and Delachanal. J. 1880, 396.
"	"	.7995, 14°	De Heen. Bei. 5, 105.
"	"	.8019, 20°	{ Bedson and Williams. Ber. 14, 2550.
"	"	.7976, 25°	
"	"	.7381 } 78°.2	{ Schiff. G. C. I. 13, 177.
"	"	.7382 } {	
"	"	.7402 } 78°.3	
"	"	.7405 } {	
"	"	.7968, 20°	Nasini. G. C. I. 13, 135.
"	"	.8000, 20°	Brühl. Bei. 4, 781.
"	"	.79603, 17°.86	{ Also intermediate values. Drecker. P. A. (2), 20, 870.
"	"	.77616, 40°.90	
"	"	.7882, 25°.3	Schall. Ber. 17, 2555.
"	"	.7899, 23°.4	
"	"	.79326, 15°	Squibb. C. N. 51, 33.
"	"	.7906, 20°	Winkelmann. P. A. (2), 26, 105.
"	"	.79175, 0°	Pagliani and Battelli. Bei. 10, 222.
"	"	.70606, 110°	{ Intermediate values given. Ramsay and Young. P. T. 1886, 129.
"	"	.5570, 200°	
"	"	.3109, 242°.9	
Propyl alcohol	C_3H_8O	.8198, 0°	Pierre and Puchot. Ann. (4), 22, 276.
"	"	.8125, 9°.6	
"	"	.7797, 50°.1	
"	"	.7494, 84°	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Propyl alcohol -----	C_3H_8O -----	.813, 13° -----	Chancel. A. C. P. 151, 302.
“ “ -----	“ -----	.812, 16° -----	Chapman and Smith. J. C. S. 22, 194.
“ “ -----	“ -----	.823, 0° -----	Saytzeff. Z. C. 13, 107.
“ “ -----	“ -----	.8205, 0° -----	Rossi. A. C. P. 159, 79.
“ “ -----	“ -----	.8066, 15° -----	Linnemann. A. C. P. 161, 26.
“ “ -----	“ -----	.8198, 0° -----	} Pierre. C. N. 27, 93.
“ “ -----	“ -----	.80825, 15° -----	
“ “ -----	“ -----	.8044, 20° -----	Brühl. Ber. 13, 1529.
“ “ -----	“ -----	.8091, 14° -----	De Heen. Bei. 5, 105.
“ “ -----	“ -----	.8203, 0° -----	} Naccari and Pagliani. Bei. 6, 88. Values given at several intermediate t°s.
“ “ -----	“ -----	.8127, 9°.71 -----	
“ “ -----	“ -----	.8001, 25°.46 -----	
“ “ -----	“ -----	.7898, 38°.18 -----	
“ “ -----	“ -----	.7773, 53°.10 -----	
“ “ -----	“ -----	.7646, 67°.46 -----	
“ “ -----	“ -----	.7550, 77°.69 -----	
“ “ -----	“ -----	.7385, 94°.40 -----	
“ “ -----	“ -----	.8177, 0° -----	
“ “ -----	“ -----	.7369, 97°.4 -----	
“ “ -----	“ -----	.8190, 20° -----	Zander. A. C. P. 214, 181.
“ “ -----	“ -----	.7365 -----	Pagliani. Bei. 7, 450.
“ “ -----	“ -----	.7366 -----	} Schiff. G. C. I. 13, 177.
“ “ -----	“ -----	.7367 -----	
“ “ -----	“ -----	.8049, 20° -----	Winkelmann. P. A. (2), 26, 105.
“ “ -----	“ -----	.8051, 20° -----	Traube. Ber. 10, 881.
Isopropyl alcohol -----	“ -----	.791, 15° -----	Linnemann. J. 18, 488.
“ “ -----	“ -----	.7915, 16°.5 -----	Siersch. A. C. P. 144, 141.
“ “ -----	“ -----	.7876, 16° -----	Linnemann. A. C. P. 161, 18.
“ “ -----	“ -----	.7887, 20° -----	Brühl. A. C. P. 203, 1.
“ “ -----	“ -----	.797, 15° -----	Duclaux. Ann. (5), 13, 89.
“ “ -----	“ -----	.7996, 0° -----	} Zander. A. C. P. 214, 181.
“ “ -----	“ -----	.7231, 82°.8 -----	
“ “ -----	“ -----	.7413 -----	} Schiff. G. C. I. 13, 177.
“ “ -----	“ -----	.7414 -----	
“ “ -----	“ -----	.8076, 20° -----	Traube. Ber. 19, 882.
Hydrate of isopropyl alcohol.	$(C_3H_8O)_3 \cdot H_2O$ -----	.800, 15° -----	Linnemann. A. C. P. 136, 40.
“ “ “ -----	$(C_3H_8O)_3 \cdot 2H_2O$ -----	.832, 15° -----	“ “
Butyl alcohol. B. 117°.5 -----	$C_4H_{10}O$ -----	.826, 0° -----	Saytzeff. Z. C. 13, 108.
“ “ -----	“ -----	.8239, 0° -----	} Lieben and Rossi. A. C. P. 158, 137.
“ “ -----	“ -----	.8105, 20° -----	
“ “ -----	“ -----	.7994, 40° -----	
“ “ -----	“ -----	.7738, 98°.7 -----	
“ “ -----	“ -----	.7735, 98°.9 -----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Butyl alcohol	$C_4 H_{10} O$	.8112, 15°	{ Two samples. Linnemann. Ann. (4), 27, 268.
"	"	.8135, 22°	
"	"	.8152, 14°	De Heen. Bei. 5, 105.
"	"	.806, 15°	Pierre. C. N. 27, 93.
"	"	.8099, 20°	{ Two lots. Brühl. A. C. P. 203, 1.
"	"	.8096, 20°	
"	"	.8233, 0°	{ Zander. A. C. P. 224, 88.
"	"	.7247, 117°.5	
"	"	.7269	{ Schiff. G. C. I. 13, 177.
"	"	.7270	
Isobutyl alcohol. B. 108°	"	.8032, 18°.5	Wurtz. A. C. P. 93, 107.
"	"	.817, 0°	{
"	"	.809, 11°	
"	"	.774, 55°	{ Pierre and Puchot. J. 21, 434.
"	"	.732, 100°	
"	"	.8055, 16°.8	Chapman and Smith. J. C. S. 22, 161.
"	"	.8003, 18°	Linnemann. A. C. P. 160, 195.
"	"	.8025, 19°	Linnemann. Ann. (4), 27, 268.
"	"	.8167	{ Menshutkin. A. C. P. 195, 351.
"	"	.8168	
"	"	.8020	{ Brühl. Ber. 13, 1520.
"	"	.8062	
"	"	.8162, 0°	{
"	"	.8052, 14°.50	
"	"	.7927, 30°.71	{ Naccari and Pagliani. Bei. 6, 89.
"	"	.7800, 46°.56	
"	"	.7608, 68°.97	{ Values given for several intermediate t's.
"	"	.7497, 80°.86	
"	"	.7295, 101°.97	{
"	"	.8064, 15°	
"	"	.7265, 106°.6	Duclaux. Ann. (5), 13, 90.
"	"	.8062, 20°	Schiff. G. C. I. 13, 177.
"	"	.79888, 26°.15	Landolt. Bei. 7, 846.
"	"	.77844, 52°.2	{ Schall. Ber. 17, 2555.
"	"	.8024, 20°.5	
"	"	.8031, 20°	Gladstone. Bei. 9, 249.
"	"	.8029, 20°	Winkelmann. P. A. (2), 26, 105.
Methylethylcarbinol. B. 99°.	"	.85, 0°	Traube. Ber. 19, 883.
"	"	.827, 0°	De Luynes. Ann. (4), 2, 424.
"	"	.810, 22°	{ Lieben. A. C. P. 150, 114.
Trimethylcarbinol. B. 82°.5	"	.8075, 0°	
"	"	.7788, 30°	Butlerow. Z. C. 14, 273.
"	"	.7792, 37°	Linnemann. Ann. (4), 27, 268.
"	"	.7864, 20°	{
"	"	.7823, 24°	
"	"	.7813, 25°	Brühl. A. C. P. 203, 1.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Trimethylcarbinol. B. 82°.5.	$C_4 H_{10} O$ -----	.7802, 26° ----	Brühl. A. C. P. 203, 1.
Hydrate of trimethylcarbinol.	$(C_4 H_{10} O)_2 \cdot H_2 O$ ----	.8276, 0° ----	Butlerow. Z. C. 14, 273.
Normal amyl alcohol.	$C_5 H_{12} O$ -----	.8296, 0° ----	Lieben and Rossi. A. C. P. 159, 70.
" " " B. 137.	" -----	.8168, 20° --	
" " " -----	" -----	.8065, 40° --	
" " " -----	" -----	.7835, 99°.15 }	
" " " -----	" -----	.8282, 0° ----	
" " " -----	" -----	.7117, 137°.85 }	Zander. A. C. P. 224, 88.
" " " -----	" -----	.8299, 0° ----	Gartenmeister. A. C. P. 233. 249.
Amyl alcohol.* B. 131°.5.	" -----	.8184, 15° ----	Cahours. A. C. P. 30, 288.
" " -----	" -----	.8137, 15° ----	Kopp. A. C. P. 55, 166.
" " -----	" -----	.8271, 0° ----	Pierre. J. 1, 62.
" " -----	" -----	.8185, 15° ----	Rieckher. J. 1, 698.
" " -----	" -----	.8253, 0° ----	Kopp. P. A. 72, 227.
" " -----	" -----	.8144, 15°.9 }	
" " -----	" -----	.8127 } 16°.4 }	
" " -----	" -----	.8145 }	Delffs. J. 7, 26. Kopp. A. C. P. 94, 257.
" " -----	" -----	.818, 14° ----	
" " -----	" -----	.8248, 0° ----	
" " -----	" -----	.8113, 18°.7 }	Schiff. Mendelejeff. J. 13, 7.
" " -----	" -----	.819, 18° ----	
" " -----	" -----	.8142, 15° ----	{ From two sources. Schorlemmer. J. 19, 527.
" " -----	" -----	.8148 }	
" " -----	" -----	.8199 }	Pierre and Puchot. Ann. (4), 22, 336.
" " -----	" -----	.826, 0° ----	
" " -----	" -----	.8204, 15° ----	Graham.
" " -----	" -----	.8148, 15° ----	Duclaux. Ann. (5), 13, 91.
" " -----	" -----	.8135, 20° ----	Landolt.
" " -----	" -----	.8244, 0° ----	{ Two products. Er- lenmeyer and Hell. A. C. P. 160, 257.
" " -----	" -----	.8144, 15° ----	
" " -----	" -----	.8102, 21°.5 }	
" " -----	" -----	.8263, 0° ----	
" " -----	" -----	.8123, 19°.7 }	Pierre. C. N. 27, 93.
" " -----	" -----	.8253, 0° ----	
" " -----	" -----	.8146, 15° ----	Pierre and Puchot. B. S. C. 20, 370.
" " -----	" -----	.8255, 0° ----	
" " Ordinary -----	" -----	.817 -----	Ley. Ber. 6, 1362.
" " Less active -----	" -----	.816, 15° ----	
" " More " -----	" -----	.808, 15° ----	
" " -----	" -----	.8123, 20° ----	Brühl. Bei. 4, 781.
" " -----	" -----	.8075, 14° ----	De Heen. Bei. 5, 105.
" " -----	" -----	.8238, 0° ----	Balbiano. Ber. 9, 1437.
" " -----	" -----	.8104, 20° ----	Two lots. Brühl. A. C. P. 203, 1.
" " -----	" -----	.8103, 20° ----	
" " -----	" -----	.8256, 0° ----	Flawitzky. Ber. 15, 11.
" " -----	" -----	.8085, 23° ----	

* Ordinary, inactive, and unspecified.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Amyl alcohol -----	$C_5 H_{12} O$ -----	.7221 } 123°.2	Schiff. Ber. 14, 2768.
" " -----	" -----	.7223 } 123°.2	
" " -----	" -----	.7154, 130°.5	Schiff. G. C. I. 13, 177.
" " -----	" -----	.8063, 26°.1	Schall. Ber. 17, 2555.
" " -----	" -----	.7729, 66°	
" " -----	" -----	.8114, 20°	Winkelmann. P. A. (2), 26, 105.
" " -----	" -----	.8121, 20°	Traube. Ber. 19, 883.
" " -----	" -----	.8252, 0°	Pagliani and Battelli. Bei. 10, 222.
Methylpropylcarbinol. -----	" -----	.8249 } 0°	Wurtz. Z. C. 11, 490.
" B. 119° -----	" -----	.8260 } 0°	
" -----	" -----	.833, 0°	Le Bel. Z. C. 14, 471.
" -----	" -----	.8239, 0°	Bielohoubek. Ber. 9, 925.
" -----	" -----	.8102, 20°	
" -----	" -----	.827, 0°	{ Wagner and Saytzeff. A. C. P. 179, 320.
" -----	" -----	.815, 18°	
Methylisopropylcarbinol. -----	" -----	.8308, 0°	Winogradow. A. C. P. 191, 125.
" B. 112° -----	" -----	.8219, 19°	
" -----	" -----	.833, 0°	Wischnegradsky. A. C. P. 190, 340.
" -----	" -----	.819, 19°	
Diethylcarbinol. B. 116°.5 -----	" -----	.832, 0°	{ Wagner and Saytzeff. A. C. P. 175, 368.
" -----	" -----	.819, 16°	
" -----	" -----	.831, 0°	{ Wagner and Saytzeff. A. C. P. 179, 320.
" -----	" -----	.816, 18°	
Dimethylethylcarbinol. -----	" -----	.829, 0°	Wurtz. A. C. P. 125, 114.
" B. 102°.5 -----	" -----	.828, 0°	Ermolaïen. Z. C. 14, 275.
" -----	" -----	.8258, 0°	Flawitzky. A. C. P. 179, 349.
" -----	" -----	.810, 19°	
" -----	" -----	.827, 0°	Wischnegradsky. A. C. P. 190, 334.
" -----	" -----	.812, 19°	
" -----	" -----	.827, 17°	Münde. Ber. 7, 1370.
" -----	" -----	.7241, 101°.6	Schiff. G. C. I. 13, 177.
Normal hexyl alcohol. -----	$C_6 H_{14} O$ -----	.820, 17°	Pelouze and Cahours. J. 16, 527.
" B. 157° -----	" -----	.813, 0°	Buff. J. 21, 336.
" -----	" -----	.819	Franchimont and Zincke. C. N. 24, 263.
" -----	" -----	.8333, 0°	
" -----	" -----	.8204, 20°	Lieben and Janecek. J. R. C. 5, 156.
" -----	" -----	.8107, 40°	
" -----	" -----	.813, 17°	Frentzel. Ber. 16, 745.
" -----	" -----	.8312 } 0°	
" -----	" -----	.8327 } 0°	
" -----	" -----	.6958 } 157°	{ Zander. A. C. P. 224, 88.
" -----	" -----	.6982 } 157°	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Normal hexyl alcohol	$C_6 H_{14} O$	.8349, 0°	Gartenmeister. A.C. P. 233, 249.
Methyldiethylcarbinol	"	.8237, 20°	Reformatsky. J. P. C. (2), 36, 340.
"	"	.8194, 25°	
"	"	.8143, 30°	
"	"	.8104, 35°	
Methylpropylcarbylcarbinol. B. 147°.	"	.8396, 0°	Two lots. Lieben and Zeisel. M. C. 4, 32.
"	"	.8244, 23°.7	
"	"	.8375, 0°	
"	"	.8257, 17°.6	
Methylbutylcarbinol, or secondary hexyl alcohol. B. 136°.	"	.8327, 0°	Wanklyn and Erlenmeyer. J. 16, 521.
"	"	.8209, 16°	
"	"	.7482, 99°	
"	"	.8266 } 0°	
"	"	.8306 }	Two samples. Hecht. A. C. P. 165, 146.
"	"	.8307, 18°	Wislicenus. A.C. P. 219, 310.
Methylisobutylcarbinol	"	.8271, 0°	Kuwschinow. Ber. 20, ref. 629.
"	"	.8183, 17°	
Ethylpropylcarbinol.	"	.8335, 0°	Völker. Ber. 8, 1019.
" B. 134°	"	.8188, 20°	
"	"	.83433, 0°	Oechsner de Coninck. C. R. 82, 93.
"	"	.81825, 20°	
Isohexyl or caproyl alcohol. B. 150°.	"	.833, 0°	Faget. J. 6, 504.
"	"	.754, 100°	
"	"	.8295, 15°	Köbig. A. C. P. 195, 102.
Dimethylisopropylcarbinol. B. 117°.	"	.8364, 0°	Prianichnikow. Z. C. 14, 275.
"	"	.8387, 0°	Pawlow. A. C. P. 196, 122.
"	"	.8232, 19°	
Methylethylpropyl alcohol.	"	.829, 15°	Romburgh. J. C. S. 52, 228.
Trimethylcarbylmethylcarbinol, or pinacolyl alcohol. B. 120°.5.	"	.8347, 0°	Friedel and Silva. J. C. S. (2), 11, 488.
Normal heptyl alcohol. B. 175°.5.	$C_7 H_{16} O$	.792, 16°.5	Wills. J. 6, 508.
" " "	"	.819, 23°	Städeler. J. 10, 361.
" " "	"	.838, 0°	
" " "	"	.830, 16°	Cross. J. C. S. 32, 123.
" " "	"	.824, 27°	
" " "	"	.8342, 0°	Zander. A. C. P. 224, 88.
" " "	"	.6876, 175°.8	
" " "	"	.8356, 0°	Gartenmeister. A. C. P. 233, 249.
Isoheptyl alcohol. ?	"	.8291, 13°.5	Four products from different sources. Schorlemmer. A. C. P. 136, 257.
" " B. 163°-168°	"	.795, 15°	
" " "	"	.8479, 16°	
" " "	"	.8286, 19°.5	
Dipropylcarbinol. B. 150°	"	.814, 25°	Kurtz. A. C. P. 161, 205.
"	"	.81882, 20°	Ustinoff and Saytzeff. J. P. C. (2), 34, 470.
"	"	.81064, 30°	
"	"	.80677, 35°	
Diisopropylcarbinol. B. 131°-132°.	"	.8323, 17°	Münde. Ber. 7, 1370.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethylisobutylcarbinol. B. 147°.5.	$C_7 H_{16} O$ -----	.827, 0° -----	E. Wagner. B. S. C. 42, 330.
Methylamylcarbinol. B. 149°.	" -----	.8185, 17°.5----	Rohn. A. C. P. 190, 310.
Triethylcarbinol. B. 141°	" -----	.8593, 0° -----	Nahapetian. Z. C. 14, 274.
" -----	" -----	.83892, 20° -----	{ Barataeff and Sayt- zeff. J. P. C. (2), 34, 465.
" -----	" -----	.82992, 30° -----	
Methylethylpropylcarbi- nol.	" -----	.8233, 20° -----	Sokolow. Ber. 21, ref. 56.
Normal octyl alcohol. B. 196°.5.	$C_8 H_{18} O$ -----	.830, 16° -----	Zincke. Z. C. 12, 55.
" " " -----	" -----	.8375, 0° -----	Zander. A. C. P. 224, 88.
" " " -----	" -----	.6807, 195°.5 } -----	
" " " -----	" -----	.8369, 0° -----	Gartenmeister. A.C. P. 233, 249.
Methylhexylcarbinol, or capryl alcohol.	" -----	.823, 17° -----	Bouis. J. 7, 581.
" -----	" -----	.826, 16° -----	Pelouze and Ca- hours. J. 16, 529.
" -----	" -----	.823, 16° -----	Neison. J. C. S. (2), 13, 207.
" -----	" -----	.6589, 181° -----	Ramsay. J. C. S. 35, 463.
" -----	" -----	.8193, 20° -----	Brühl. A. C. P. 203, 1.
" -----	" -----	.6781 } -----	{ Schiff. G. C. I. 13, 177.
" -----	" -----	.6782 } 179°-----	
" -----	" -----	.817 -----	Duclaux. Ann. (5), 13, 92.
"Octylene hydrate" -----	" -----	.811, 0° -----	Clermont. A. C. P. 149, 38.
" " " -----	" -----	.793, 23° -----	
Primary isoöctyl alcohol.	" -----	.841, 0° -----	Williams. J. C. S. 35, 125.
" " B. 179°.5	" -----	.833, 12° -----	
" " " -----	" -----	.828, 20° -----	
" " " -----	" -----	.821, 30° -----	
" " " -----	" -----	.814, 40° -----	
" " " -----	" -----	.807, 50° -----	
" " " -----	" -----	.867, 100° -----	
Secondary isoöctylalcohol.	" -----	.820, 15° -----	" "
" " B. 161°.5	" -----	.811, 30° -----	
" " " -----	" -----	.801, 40° -----	
" " " -----	" -----	.793, 100° -----	
Methyldipropylcarbinol	" -----	.82357, 20° -----	Gortaloff and Saytz- eff. J. P. C. (2), 33, 202.
" -----	" -----	.81506, 30° -----	
" -----	" -----	.81080, 35° -----	
Diethylpropylcarbinol	" -----	.83794, 20° -----	Sokolow. Ber. 21, ref. 56.
Isodibutol. B. 147°	" -----	.8417, 0° -----	Butlerow. J. C. S. 34, 122.
Nonyl alcohol. B. 187°	$C_9 H_{20} O$ -----	.835, 18°.5----	Lemoine. B. S. C. 41, 161.
Normal nonyl alcohol	" -----	.8415, 0° -----	Krafft. Ber. 19, 2221.
" " " -----	" -----	.8346, 10° -----	
" " " -----	" -----	.8279, 20° -----	
Ethyldipropylcarbinol	" -----	.83368, 20° -----	Tschebotareff and Saytzeff. J. P. C. (2), 33, 193.
" -----	" -----	.82583, 30° -----	
" -----	" -----	.82190, 35° -----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethylhexylcarbinol.	$C_9 H_{20} O$	.839, 0°	Wagner. Ber. 17, ref. 316.
“ “ B. 195°	“	.825, 20°	
Normal decyl alcohol	$C_{10} H_{22} O$	.8389, 7°	Krafft. Ber. 16, 1714.
“ “ “	“	.8297, 20°	
“ “ “	“	.7734, 98°.7	
Decyl alcohol. B. 200°	“	.858, 18°.5	Lemoine. B. S. C. 41, 161.
Isodecyl alcohol. B. 203°	“	.8569, 0°	Borodin. J. 17, 338.
Propylhexylcarbinol.	“	.839, 0°	E. Wagner. B. S. C. 42, 330.
“ “ B. 210°.			
Methylnonylcarbinol.	$C_{11} H_{24} O$	.8268, 19°	Giesecke. Z. C. 13, 431.
“ “ B. 228°.			
Normal dodecyl alcohol	$C_{12} H_{26} O$	.8309, 24°	Krafft. Ber. 16, 1714.
“ “ “	“	.8201, 40°	
“ “ “	“	.7781, 99°	
Normal tetradecyl alcohol.	$C_{14} H_{30} O$	.8236, 38°	“ “
“ “ “	“	.8153, 50°	
“ “ “	“	.7813, 98°.9	
Isomer of myristic alcohol. B. 270°—275°.	“	.8368, 15°	Perkin, Jr. J. C. S. 43, 77.
“ “ “	“	.8301, 30°	
“ “ “	“	.8279, 35°	
Normal hexdecyl alcohol	$C_{16} H_{34} O$	.8176, 49°.5	Krafft. Ber. 16, 1714.
“ “ “	“	.8105, 60°	
“ “ “	“	.7837, 98°.7	
“ “ “			
Cetyl alcohol	“	.8185, 49°.5	“ “
Normal octodecyl alcohol	$C_{18} H_{38} O$	.8124, 59°	
“ “ “	“	.8048, 70°	
“ “ “	“	.7849, 99°.1	

2d. Oxides of the Paraffin Series.*

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl ethyl oxide	$C H_3. C_2 H_5. O$	.7252, 0°	Dobriner. A. C. P. 243, 1.
“ “ “	“	.7127, 10°.8	
Ethyl oxide, or ether	$(C_2 H_5)_2 O$	.7119, 24°.8	Gay Lussac. Dumas and Boullay. Ann. (2), 36, 294.
“ “ “	“	.713, 20°	
“ “ “	“	.733, 12°.5	Muncke. M. St. P. Sav. Et. 1, 1831, 249.
“ “ “	“	.73568, 0°	Kopp. P. A. 72, 231.
“ “ “	“	.72895, 6°.9	
“ “ “	“	.7297, 5°—10°	Regnault. P. A. 62, 50.
“ “ “	“	.7241, 10°—15°	
“ “ “	“	.7185, 15°—20°	Pierre. C. R. 27, 213.
“ “ “	“	.73574, 0°	
“ “ “	“	.728, 7°	Delffs. J. 7, 26.

* All of Dobriner's ethers represent normal paraffins.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethyl oxide, or ether-----	$(C_2 H_5)_2 O$ -----	.73644, 0°-----	Intermediate values given. Mendelejeff. A. C. P. 119, 1.
" " "-----	"-----	.63987, 78°.3-----	
" " "-----	"-----	.60896, 99°.9-----	
" " "-----	"-----	.55958, 131°.6-----	
" " "-----	"-----	.51735, 157°-----	
" " "-----	"-----	.7271, 10°.2-----	Matthiessen and Hockin.
" " "-----	"-----	.7204, 15°.8-----	
" " "-----	"-----	.6956, 34°.5-----	Ramsay. J. C. S. 35, 463.
" " "-----	"-----	.7157, 20°-----	Brühl. Ber. 13, 1530.
" " "-----	"-----	.7197, 15°-----	Buchan. C. N. 51, 94.
" " "-----	"-----	.73128, 4°-----	Squibb. C. N. 51, 67 and 76.
" " "-----	"-----	.71888, 15°-----	
" " "-----	"-----	.73590, 0°-----	
" " "-----	"-----	.7304, 5°-----	
" " "-----	"-----	.7248, 10°-----	
" " "-----	"-----	.7192, 15°-----	Oudemans. Ber. 19, ref. 2.
" " "-----	"-----	.7135, 20°-----	
" " "-----	"-----	.7077, 25°-----	
" " "-----	"-----	.7019, 30°-----	
" " "-----	"-----	.6960, 35°-----	
" " "-----	"-----	.6704, 50°-----	Also values for every 5° from 0° to 193°. Ramsay and Young. P. T. 178, 85.
" " "-----	"-----	.6105, 100°-----	
" " "-----	"-----	.5179, 150°-----	
" " "-----	"-----	.3030, 193°-----	
" " "-----	"-----	.2463, at critical t°.	
Methyl propyl oxide-----	$C H_3. C_3 H_7. O$ -----	.7471, 0°-----	Ramsay and Young. P. M. 1887, 458.
" " "-----	"-----	.70415, 38°.9-----	
Ethyl propyl oxide-----	$C_2 H_5. C_3 H_7. O$ -----	.7386, 20°-----	Dobriner. A. C. P. 243, 1.
" " "-----	"-----	.7545, 0°-----	Brühl. Bei. 4, 779.
" " "-----	"-----	.6871, 63°.6-----	Dobriner. A. C. P. 243, 1.
Ethyl isopropyl oxide-----	"-----	.7447, 0°-----	Markownikoff. A. C. P. 138, 374.
Methyl butyl oxide-----	$CH_3. C_4 H_9. O$ -----	.7635, 0°-----	Dobriner. A. C. P. 243, 1.
" " "-----	"-----	.6901, 70°.3-----	
Propyl oxide-----	$(C_3 H_7)_2 O$ -----	.7633, 0°-----	Zander. A. C. P. 214, 181.
" " "-----	"-----	.6743, 90°.7-----	
Isopropyl oxide-----	"-----	.7435, 0°-----	" "
" " "-----	"-----	.6715, 69°-----	
Ethyl butyl oxide-----	$C_2 H_5. C_4 H_9. O$ -----	.7694, 0°-----	Lieben and Rossi. A. C. P. 158, 137.
" " "-----	"-----	.7522, 20°-----	
" " "-----	"-----	.7367, 40°-----	
" " "-----	"-----	.761, 0°-----	
" " "-----	"-----	.7680, 0°-----	
" " "-----	"-----	.6785, 91°.4-----	Saytzeff.
" " "-----	"-----	.7507, 0°-----	Dobriner. A. C. P. 243, 1.
Ethyl isobutyl oxide-----	"-----	.6871, 91°-----	Wurtz. J. 7, 574.
Methyl amyl oxide-----	$C H_3. C_5 H_{11}. O$ -----	.8036, 14°.7-----	Schiff. Bei. 9, 559.
Ethyl isoamyl oxide-----	$C_2 H_5. C_5 H_{11}. O$ -----	.764, 18°-----	Mendelejeff. J. 13, 7.
" " "-----	"-----		Reboul and Truchot. J. 20, 582.
Tertiary ethylamyl oxide-----	"-----	.759, 21°-----	" "
" " "-----	"-----	.7785, 0°-----	Kondakoff. Ber. 20, ref. 549.
" " "-----	"-----	.751, 18°-----	
Propyl butyl oxide-----	$C_3 H_7. C_4 H_9. O$ -----	.7773, 0°-----	Dobriner. A. C. P. 243, 1.
" " "-----	"-----	.6638, 117°.1-----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Butyl oxide-----	$(C_4 H_9)_2 O$ -----	.784, 0°-----	Lieben and Rossi. A. C. P. 165, 109. Dobriner. A. C. P. 243, 1.
" "-----	"-----	.7685, 20°-----	
" "-----	"-----	.7555, 40°-----	
" "-----	"-----	.7865, 0°-----	
" "-----	"-----	.6575, 140°.9-----	
Isobutyl oxide-----	"-----	.7697, 0°-----	Puchot. Ann. (5), 28, 521-528. Four samples.
" "-----	"-----	.7294, 46°.4-----	
" "-----	"-----	.7040, 74°.3-----	
" "-----	"-----	.766, 0°-----	
" "-----	"-----	.724, 48°.75-----	
" "-----	"-----	.770, 0°-----	
" "-----	"-----	.734, 42°-----	
" "-----	"-----	.7678, 0°-----	Kessler. A. C. P. 175, 55.
Secondary butyl oxide-----	"-----	.756, 21°-----	
Ethyl hexyl oxide-----	$C_2 H_5. C_6 H_{13}. O$ -----	.7752, 16°.5-----	Schorlemmer. J. C. S. 19, 357. Reboul and Truchot. J. 20, 582.
" "-----	"-----	.7638, 30°-----	
" "-----	"-----	.7344, 63°-----	
" "-----	"-----	.776, 13°-----	
Diethyl-ethyl oxide-----	"-----	.7865, 0°-----	Lieben. A. C. P. 178, 14.
" "-----	"-----	.7702, 20°-----	
" "-----	"-----	.7574, 40°-----	
Methyl heptyl oxide-----	$C H_3. C_7 H_{15}. O$ -----	.7953, 0°-----	Dobriner. A. C. P. 243, 1.
" "-----	"-----	.6667, 149°.8-----	
Ethyl heptyl oxide-----	$C_2 H_5. C_7 H_{15}. O$ -----	.7949, 0°-----	Cross. J. C. S. 31, 123.
" "-----	"-----	.65065, 166°.6-----	
" "-----	"-----	.790 } 16°-----	
" "-----	"-----	.791 }-----	
Methyl octyl oxide-----	$C H_3. C_8 H_{17}. O$ -----	.8014, 0°-----	Dobriner. A. C. P. 243, 1.
" "-----	"-----	.65386, 173°-----	
Methyl capryl oxide-----	"-----	.830, 16°.5-----	Wills. J. 6, 510.
Amyl oxide-----	$(C_5 H_{11})_2 O$ -----	.779-----	Rieckher. J. 1, 698.
" "-----	"-----	.7994, 0°-----	Wurtz. J. 9, 654.
Propyl heptyl oxide-----	$C_3 H_7. C_7 H_{15}. O$ -----	.7987, 0°-----	Dobriner. A. C. P. 243, 1.
" "-----	"-----	.6420, 187°.6-----	
Ethyl octyl oxide-----	$C_2 H_5. C_8 H_{17}. O$ -----	.794, 17°-----	Möslinger. Ber. 9, 1003.
" "-----	"-----	.8008, 0°-----	Dobriner. A. C. P. 243, 1.
" "-----	"-----	.6390, 189°.2-----	
Ethyl capryl oxide-----	"-----	.791, 16°-----	Wills. J. 6, 510.
Butyl heptyl oxide-----	$C_4 H_9. C_7 H_{15}. O$ -----	.8023, 0°-----	Dobriner. A. C. P. 243, 1.
" "-----	"-----	.6327, 205°.7-----	
Propyl octyl oxide-----	$C_3 H_7. C_8 H_{17}. O$ -----	.8039, 0°-----	" "
" "-----	"-----	.6300, 207°-----	
Butyl octyl oxide-----	$C_4 H_9. C_8 H_{17}. O$ -----	.8069, 0°-----	" "
" "-----	"-----	.6277, 225°.7-----	
Amyl capryl oxide-----	$C_5 H_{11}. C_8 H_{17}. O$ -----	.608, 20°-----	Wills. J. 6, 510.
Normal heptyl oxide-----	$(C_7 H_{15})_2 O$ -----	.8152, 0°-----	Dobriner. A. C. P. 243, 1.
" "-----	"-----	.6055, 261°.9-----	
Heptyl octyl oxide-----	$C_7 H_{15}. C_8 H_{17}. O$ -----	.8182, 0°-----	" "
" "-----	"-----	.6038, 278°.8-----	
Normal octyl oxide-----	$(C_8 H_{17})_2 O$ -----	.8035-----	Möslinger. Ber. 9, 1001.
" "-----	"-----	.8050, 17°-----	
" "-----	"-----	.82035, 0°-----	Dobriner. A. C. P. 243, 1.
" "-----	"-----	.5983, 291°.7-----	

3d. The Fatty Acids.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Formic acid	$C H_2 O_2$	1.2353	Liebig. Gm. H.
" "	"	1.2227, 0°	Kopp. P. A. 72, 248.
" "	"	1.2067, 13°.7	
" "	"	1.2211, 20°	Landolt. P. A. 117, 353.
" "	"	1.2211	Semenoff. Ann. (4), 6, 115.
" "	"	1.2165	
" "	"	1.24482, 0°	Petterson. U. N. A. 1879.
" "	"	1.2188, 20°	Brühl. Bei. 4, 781.
" "	"	1.2415, 0°	Zander. A. C. P. 224, 88.
" "	"	1.1175, 100°.8	
" "	"	1.2191, 20°	Winkelmann. P. A. (2), 26, 105.
" "	"	1.2182, 22°	Lüdeking. P. A. (2), 27, 72.
" "	"	1.1170, 100°.3	Schiff. Ber. 19, 560.
" "	"	1.2190, 20°	Traube. Ber. 19, 884.
" "	"	1.22734, 15°	Perkin. J. C. S. 49, 777.
Acetic acid	$C_2 H_4 O_2$	1.0630, 16°	Mollerat. Ann. (1), 68, 88.
" "	"	1.0622	Sebille-Auger. Watts' Dict.
" "	"	1.0635, 15°	Mohr. A. C. P. 31, 277.
" "	"	1.100, 8°.5, s.	Persoz. Watts' Dict.
" "	"	1.0650, 13°.1	
" "	"	1.0647, 5°-10°	Regnault. P. A. 62, 50.
" "	"	1.0591, 10°-15°	
" "	"	1.0535, 15°-20°	Kopp. P. A. 72, 253.
" "	"	1.08005, 0°	
" "	"	1.06195, 17°	Delffs. A. C. P. 92, 277.
" "	"	1.0635, 10°	
" "	"	1.0607, 15°	Mendelejeff. J. 13, 7.
" "	"	1.0563	Roscoe. J. C. S. 15, 270.
" "	"	1.0565	
" "	"	1.0514, 20°	Landolt. P. A. 117, 353.
" "	"	1.05533, 15°	Oudemans. Z. C. 1866, 750.
" "	"	1.0626, 20°	Linnemann. A. C. P. 160, 216.
" "	"	1.0502	Landolt. Ber. 9, 907.
" "	"	1.0490, 18°	Kohlrausch. P. A. 159, 240.
" "	"	.9325, 113°	Ramsay. J. C. S. 35, 463.
" "	"	1.0635, 15°	Duclaux. Ann. (5), 13, 95.
" "	"	1.1149, 0°, s.	Petterson. U.N.A. 1879.
" "	"	1.0576, 12°.79	
" "	"	1.0543, 15°.97	
" "	"	1.0503, 19°.03	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Acetic acid-----	$C_2H_4O_2$ -----	1.0559, 20° ---	Bedson and Williams. Ber. 14, 2550.
“ “-----	“-----	1.0495, 20° ---	Brühl. Bei. 4, 781.
“ “-----	“-----	1.0701, 0° ---	Zander. A. C. P. 224, 88.
“ “-----	“-----	.9372, 118°.1 } ---	
“ “-----	“-----	1.0532, 20° ---	Winkelmann. P. A. (2), 26, 105.
“ “-----	“-----	1.0465, 22° ---	Lüdeking. P. A. (2), 27, 72.
“ “-----	“-----	1.05704, 15° ---	Perkin. J. C. S. 49, 777.
Propionic acid-----	$C_3H_6O_2$ -----	1.0161, 0° ---	Kopp. A. C. P. 95, 307.
“ “-----	“-----	.9911, 25°.2 } ---	
“ “-----	“-----	.9963, 20° ---	Landolt. P. A. 117, 353.
“ “-----	“-----	.992, 18° ---	Linnemann. J. 21, 433.
“ “-----	“-----	.9961, 19° ---	Linnemann. A. C. P. 160, 195.
“ “-----	“-----	1.0143, 0° ---	Pierre and Puchot. B. S. C. 18, 453.
“ “-----	“-----	.9607, 49°.6 } ---	
“ “-----	“-----	.9062, 99°.8 } ---	Brühl. Ber. 13, 1530.
“ “-----	“-----	.9946, 20° ---	
“ “-----	“-----	1.0199, 0° ---	Zander. A. C. P. 214, 181.
“ “-----	“-----	.8657, 140°.7 } ---	
“ “-----	“-----	1.0133, 0° ---	Zander. A. C. P. 224, 88.
“ “-----	“-----	.8589 } 140°.5 } ---	
“ “-----	“-----	.8599 } ---	Winkelmann. P. A. (2), 26, 105.
“ “-----	“-----	.9939, 20° ---	
“ “-----	“-----	.9902, 25° ---	Lüdeking. P. A. (2), 27, 72.
“ “-----	“-----	.9956, 20° ---	Traube. Ber. 19, 885.
“ “-----	“-----	1.0089, 0° ---	Renard. C. R. 103, 158.
“ “-----	“-----	.9904, 18° ---	
“ “-----	“-----	.99883, 15° ---	Perkin. J. C. S. 49, 777.
Butyric acid. B. 163°-----	$C_4H_8O_2$ -----	.9675, 25° ---	Chevreul.
“ “-----	“-----	.963, 15° ---	Pelouze and Gélis. P. A. 59, 625.
“ “-----	“-----	.98165, 0° ---	Pierre. C. R. 27, 213.
“ “-----	“-----	.9673, 15° ---	Mendelejeff. J. 13, 7.
“ “-----	“-----	.9610, 20° ---	Landolt. P. A. 117, 353.
“ “-----	“-----	.9850, 13°.5 ---	Bulk. A. C. P. 139, 62.
“ “-----	“-----	.9580, 14° ---	Linnemann. A. C. P. 160, 195.
“ “-----	“-----	.9601, 14° ---	Linnemann. Ann. (4), 27, 268.
“ “-----	“-----	.974, 15° ---	Graham. A. C. P. 123, 99.
“ “-----	“-----	.9587, 20° ---	Brühl. A. C. P. 203, 1.
“ “-----	“-----	.9594, 20° ---	Landolt. Bei. 7, 845.
“ “-----	“-----	.8141, 161°.5 ---	Schiff. G. C. I. 13, 177.

NAME.	FORMULA.	SP. GRAVITY	AUTHORITY.
Butyric acid	$C_4H_8O_2$	.9746 } 0°	Zander. A. C. P. 224, 88.
" "	"	.9781 } $162^\circ.5$	
" "	"	.8099 } $162^\circ.5$	
" "	"	.8120 } $162^\circ.5$	
" "	"	.9603, 20°	Winkelmann. P. A. (2), 26, 105.
" "	"	.9549, 25°	Lüdeking. P. A. (2), 27, 72.
" "	"	.9809, 0°	Gartenmeister. A. C. P. 233, 249.
" "	"	.9624, 20°	Traube. Ber. 19, 885.
Isobutyric acid. B. 154°	"	.98862, 0° }	Kopp. P. A. 72, 258.
" "	"	.9739, 15° }	
" "	"	.973, 7°	Delffs. A. C. P. 92, 277.
" "	"	.9598, 0°	Markownikoff. A. C. P. 138, 368.
" "	"	.9208, 50°	
" "	"	.8965, 100°	
" "	"	.9503, 20°	
" "	"	.9697, 0°	Pierre and Puchot. B. S. C. 19, 72.
" "	"	.9160, $52^\circ.6$	
" "	"	.8665, $99^\circ.8$	
" "	"	.8220, $139^\circ.8$	
" "	"	.9490, 20°	Brühl. Ber. 13, 1529.
" "	"	.9515, 20°	Brühl. A. C. P. 200, 180.
" "	"	.8087, 153°	Schiff. G. C. I. 13, 177.
" "	"	.9651, 0°	Zander. A. C. P. 224, 88.
" "	"	.8054, 154°	
" "	"	.9519, 20°	Traube. Ber. 19, 886.
Normal valeric acid.	$C_5H_{10}O_2$	.9577, 0°	Lieben and Rossi. A. C. P. 159, 58.
" " " B. 185°	"	.9415, 20°	
" " " "	"	.9284, 40°	
" " " "	"	.9034, $99^\circ.3$	
" " " "	"	.945, $17^\circ.5$	Cahours and Demar- çay. C. R. 89, 331.
" " " "	"	.7569, 195°	Ramsay. J. C. S. 35, 463.
" " " "	"	.9608, 0°	Kehrer and Tollens. A. C. P. 206, 239.
" " " "	"	.9448, 20°	
" " " "	"	.9562, 0°	Zander. A. C. P. 224, 88.
" " " "	"	.7828, $185^\circ.4$	
" " " "	"	.9568, 0°	Gartenmeister. A. C. P. 233, 249.
Isovaleric acid.* B. 175°	"	.941, 14° }	Chevreul.
" " "	"	.932, 28° }	
" " "	"	.944, 10°	Trommsdorf. A. C. P. 6, 176.
" " "	"	.930, $12^\circ.5$	Trautwein. Gm. H.
" " "	"	.937, $16^\circ.5$	Dumas and Stas. J. P. C. 21, 267.
" " "	"	.9403, 15°	Personne. J. 7, 653.
" " "	"	.9555, 0°	Kopp. A. C. P. 95, 307.
" " "	"	.9378, $19^\circ.6$	

* Including ordinary and unspecified valerianic acid.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Isovaleric acid -----	$C_5H_{10}O_2$ -----	.935, 15° -----	Delffs. A. C. P. 92, 277.
“ “ -----	“ -----	.9558, 15° -----	Mendelejeff. J. 13, 7.
“ “ -----	“ -----	.9313, 20° -----	Landolt. P. A. 117, 353.
“ “ -----	“ -----	.95357, 0° -----	Frankland and Duppa. J. 20, 396.
“ “ -----	“ -----	.9470, 0° -----	Pierre and Puchot. B. S. C. 19, 72.
“ “ -----	“ -----	.8972, 54°.65 -----	
“ “ -----	“ -----	.8542, 99°.9 -----	
“ “ -----	“ -----	.8095, 147°.5 -----	
“ “ -----	“ -----	.9465, 0° -----	
“ “ -----	“ -----	.9285, 20°.2 -----	From different sources. Erlenmeyer and Hell. A. C. P. 160, 257.
“ “ -----	“ -----	.9468, 0° -----	
“ “ -----	“ -----	.9295, 19°.7 -----	
“ “ -----	“ -----	.9462, 0° -----	
“ “ -----	“ -----	.9299, 18°.8 -----	
“ “ -----	“ -----	.917, 15° -----	Ley. Ber. 6, 1362.
“ “ -----	“ -----	.93087, 17°.4 -----	Schmidt and Sachtleben.
“ “ -----	“ -----	.9345, 15° -----	Poetsch. A. C. P. 218, 56.
“ “ -----	“ -----	.9297, 20° -----	Winkelmann. P. A. (2), 26, 105.
“ “ -----	“ -----	.941, 16° -----	Renard. Ann. (6), 1, 223.
“ “ -----	“ -----	.9318, 20° -----	Traube. Ber. 19, 886.
Ethylmethylacetic acid, } {	“ -----	.9505, 0° -----	{ Erlenmeyer and Hell. A. C. P. 160, 257.
or active valeric acid. } {	“ -----	.9331, 19°.5 -----	
B. 172°.5. -----	“ -----	.938, 24° -----	Saur. A. C. P. 188, 275.
“ “ “ -----	“ -----	.917, 15° -----	Ley. Ber. 6, 1362.
“ “ “ -----	“ -----	.941, 21° -----	Pagenstecher. A. C. P. 195, 118.
“ “ “ -----	“ -----	.948, 14°.5 -----	Lescoeur. J. C. S. 31, 589.
“ “ “ -----	“ -----	.9405, 17° -----	Schmidt. Ber. 12, 257.
Trimethyl acetic acid -----	“ -----	.944, 0° -----	Butlerow. Ber. 7, 728.
“ “ -----	“ -----	.905, 50° -----	
Normal caproic acid. -----	$C_6H_{12}O_2$ -----	.922, 26° -----	Chevreul.
“ “ B. 205° -----	“ -----	.931, 15° -----	Fehling. A. C. P. 53, 406.
“ “ “ -----	“ -----	.9449, 0° -----	Lieben and Rossi. A. C. P. 159, 70.
“ “ “ -----	“ -----	.9294, 20° -----	
“ “ “ -----	“ -----	.9172, 40° -----	
“ “ “ -----	“ -----	.8947, 99°.1 -----	
“ “ “ -----	“ -----	.9438, 0° -----	Lieben. A. C. P. 170, 89.
“ “ “ -----	“ -----	.928, 20° -----	
“ “ “ -----	“ -----	.9164, 40° -----	
“ “ “ -----	“ -----	.933, 23° -----	Cahours and Demarcay. C. R. 89, 331.
“ “ “ -----	“ -----	.9446, 0° -----	Zander. A. C. P. 224, 88.
“ “ “ -----	“ -----	.7589, 205° -----	
“ “ “ -----	“ -----	.9449 -----	Gartenmeister. A. C. P. 233, 249.
“ “ “ -----	“ -----	.9453 -----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Isocaproic acid. B. 199°	$C_6H_{12}O_2$	.9252, 20°	Landolt. P. A. 117, 353.
" "	"	.9237, 20°	Brühl. Bei. 4, 781.
Diethylacetic acid. B. 190°	"	.925, 27°	Sticht. J. 21, 522.
" "	"	.945	Schnapp. Ber. 10, 1954.
" "	"	.9355, 0°	Saytzeff. Ber. 11, 512.
" "	"	.9196, 18	
Methylpropylacetic acid.	"	.9414, 0°	" "
" B. 193°	"	.9279, 18°	
" "	"	.9231, 25°	Liebermann and Scheibler. Ber. 16, 1823.
" "	"	.9286, 15°	Liebermann and Kleemann. Ber. 17, 918.
Methylisopropylacetic acid	"	.928, 15°	Romburgh. J. C. S. 52, 232.
Methylethylpropionic acid	"	.930, 15°	Romburgh. J. C. S. 52, 228.
Oenanthic acid. B. 223°	$C_7H_{14}O_2$	.9167, 24°	Städeler. J. 10, 360.
" "	"	.9179, 18°	Landolt. P. A. 117, 353.
" "	"	.9175, 20°	
" "	"	.9212, 24°	Franchimont. A. C. P. 165, 237.
" "	"	.9345, 0°	Grimshaw and Schorlemmer. A. C. P. 170, 137.
" "	"	.9278, 8°.5	
" "	"	.9208, 16°	
" "	"	.9110, 28°	
" "	"	.9359, 0°	" "
" "	"	.9348, 9°	
" "	"	.9235, 28°	Mehlis. A. C. P. 185, 362.
" "	"	.916, 21°	
" "	"	.935, 0°	Lieben and Janecek. J. R. C. 5, 156.
" "	"	.9198, 20°	
" "	"	.9084, 40°	
" "	"	.924, 21°	Cahours and Demarçay. C. R. 89, 331.
" "	"	.9160, 20°	Brühl. Bei. 4, 781.
" "	"	.9313, 0°	Zander. A. C. P. 224, 88.
" "	"	.7429, 223°.2	
" "	"	.9333, 0°	Gartenmeister. A. C. P. 233, 249.
Isoheptylic acid. B. 211°.5	"	.9305, 0°	Hecht. A. C. P. 209, 315.
" "	"	.9138, 21°	
" "	"	.8496, 100°	
Isoamylacetic acid. B. 217°	"	.9260, 15°	Poetsch. A. C. P. 218, 56.
Caprylic acid. B. 236°.5	$C_8H_{16}O_2$	.911, 20°	Fehling. A. C. P. 53, 401.
" "	"	.905, 21°	Perrot. J. 10, 353.
" "	"	.901, 18°	Fischer. A. C. P. 118, 307.
" "	"	.923, 17°	Cahours and Demarçay. C. R. 89, 331.
" "	"	.9270, 0°	Zander. A. C. P. 224, 88.
" "	"	.7264, 236°.5	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Caprylic acid-----	$C_8H_{16}O_2$ -----	.9288, 0°-----	Gartenmeister. A. C. P. 233, 249.
Isoöctylic acid. B. 219°--	"-----	.926, 0°-----	Williams. J. C. S. 35, 125.
" "-----	"-----	.911, 20°-----	
" "-----	"-----	.903, 30°-----	
" "-----	"-----	.893, 40°-----	
" "-----	"-----	.885, 50°-----	
" "-----	"-----	.846, 100°-----	
Dipropylacetic acid. B. 219°.5.	"-----	.9215, 0°-----	Burton. A. C. J. 3, 389.
Pelargonic acid. B. 253°--	$C_9H_{18}O_2$ -----	.903, 21°-----	Perrot. J. 10, 353.
" "-----	"-----	.9065, 17°-----	Franchimont and Zincke. C. N. 25, 57.
" "-----	"-----	.90656-----	From six different sources. Bergmann. Arch. Pharm. 22, 331.
" "-----	"-----	.90638-----	
" "-----	"-----	.90630-----	
" "-----	"-----	.90639-----	
" "-----	"-----	.90621-----	
" "-----	"-----	.90609-----	
" "-----	"-----	.9109, 12°.5-----	Krafft. Ber. 15, 1687.
" "-----	"-----	.9068, 17°.5-----	
" "-----	"-----	.9433, 99°.3-----	
" "-----	"-----	.9082, 0°-----	Gartenmeister. A. C. P. 233, 249.
Isononylic acid. B. 245°--	"-----	.90325, 18°-----	Kullhem. A. C. P. 173, 319.
Rutylic acid-----	$C_{10}H_{20}O_2$ -----	.930, 37°, l.---	Fischer. A. C. P. 118, 307.
Lauric acid-----	$C_{12}H_{24}O_2$ -----	.883, 20°, s.---	Görgey. A. C. P. 66, 306.
Stearic acid-----	$C_{18}H_{36}O_2$ -----	1.01, 0°, s.---	Saussure. Watts' Dict. Kopp. J. 8, 43. Schiff. A. C. P. 223, 247.
" "-----	"-----	.854, l.-----	
" "-----	"-----	.8521, 69°.5-----	
" "-----	"-----		

4th. Anhydrides of the Fatty Acids.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Acetic anhydride-----	$C_4H_6O_3$ -----	1.073, 20°.5-----	Gerhardt. J. 5, 451.
" "-----	"-----	1.0969, 0°-----	Kopp. A. C. P. 94, 257.
" "-----	"-----	1.0799, 15°.2-----	
" "-----	"-----	1.075, 15°-----	Schlagdenhauffen.
" "-----	"-----	1.0793, 15°-----	Mendelejeff. J. 13, 7.
" "-----	"-----	1.0787, 20°-----	Nasini. Ber. 14, 1513.
" "-----	"-----	1.0816, 20°-----	Brühl. Bei. 4, 782.
Propionic anhydride-----	$C_6H_{10}O_3$ -----	1.01, 18°-----	Linnemann. J. 21, 433.
" "-----	"-----	1.0169, 15°-----	Perkin. J. C. S. (2), 13, 11.
Butyric anhydride-----	$C_8H_{14}O_3$ -----	.978, 12°.5-----	Gerhardt. J. 5, 452.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Isobutyric anhydride -----	$C_8 H_{14} O_3$ -----	.9574, 16°.5---	Toennies and Staub. Ber. 17, 851.
Valeric anhydride -----	$C_{10} H_{18} O_3$ -----	.934, 15° -----	Watts' Dictionary.
Oenanthic anhydride-----	$C_{14} H_{26} O_3$ -----	.91, 14° -----	Malerba. J. 7, 444.
" " -----	" " -----	.932, 21° -----	Mehlis. A. C. P. 185, 371.

5th. Ethers of the Series $C_n H_{2n} O_2$.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl formate-----	$C H_3. C H O_2$ -----	.9984, 0° ---	Kopp. P. A. 72, 261.
" " -----	" -----	.9776, 15°.3 ---	
" " -----	" -----	.9766, 16° ---	
" " -----	" -----	.9928, 0° -----	
" " -----	" -----	.9797, 15° -----	Volhard. A. C. P. 176, 135.
" " -----	" -----	.9482, 33° -----	Kraemer and Grodzki. Ber. 9, 1928.
" " -----	" -----	.9767, 14° -----	Ramsay. J. C. S. 35, 463.
" " -----	" -----	.9566, 32°.3---	De Heen. Bei. 5, 105.
" " -----	" -----	.99839, 0° ---	Schiff. G. C. I. 13, 177.
" " -----	" -----	.95196, 32°.3 }	Elsässer. A. C. P. 218, 302.
Ethyl formate-----	$C_2 H_5. C H O_2$ -----	.9157, 18° -----	Gehler. See Böttger.
" " -----	" -----	.912 -----	Liebig. Quoted by Kopp.
" " -----	" -----	.94474, 0° ---	Kopp. P. A. 72, 266.
" " -----	" -----	.92546, 15°.7 }	
" " -----	" -----	.9394, 0° } --	
" " -----	" -----	.9188, 17° } --	
" " -----	" -----	.93565, 0° -----	Pierre. C. R. 27, 213.
" " -----	" -----	.917 -----	Löwig. J. 14, 599.
" " -----	" -----	.8649, 55° -----	Ramsay. J. C. S. 35, 463.
" " -----	" -----	.9064, 20° -----	Brühl. Ber. 13, 1530.
" " -----	" -----	.9214, 14° -----	De Heen. Bei. 5, 105.
" " -----	" -----	.9367, 0° -----	Several intermediate values given. Nac- cari and Pagliani. Bei. 6, 89.
" " -----	" -----	.9238, 10°.84	
" " -----	" -----	.9122, 20°.03	
" " -----	" -----	.8959, 32°.79	
" " -----	" -----	.8865, 40°.02	
" " -----	" -----	.8740, 49°.76	
" " -----	" -----	.8707, 51°.94	
" " -----	" -----	.8730 } 53°.4	
" " -----	" -----	.8731 } 53°.4	{ Schiff. G. C. I. 13, 177.
" " -----	" -----	.93757, 0° ---	
" " -----	" -----	.86667, 54°.4 }	Elsässer. A. C. P. 218, 302.
" " -----	" -----	.9194 } 20°	Winkelmann. P. A. (2), 26, 105.
" " -----	" -----	.9152 } 20°	
" " -----	" -----	.9445, 0° -----	Gartenmeister. A. C. P. 233, 249.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Propyl formate	$C_3 H_7. C H O_2$	.9197, 0°	Pierre and Puchot. Z. C. 12, 660.
" "	" "	.877, 38°.5	
" "	" "	.836, 72°.5	
" "	" "	.9188, 0°	Pierre and Puchot. Ann. (4), 22, 288.
" "	" "	.8761, 38°.5	
" "	" "	.835, 72°.5	
" "	" "	.9026, 14°	De Heen. Bei. 5, 105.
" "	" "	.91838, 0°	Elsässer. A. C. P. 218, 302.
" "	" "	.82146, 81°	
" "	" "	.9023	Winkelman. P. A. (2), 26, 105.
" "	" "	.9125	
" "	" "	.9250, 0°	Gartenmeister. A.C. P. 233, 249.
" "	" "	.8270, 81°	
Butyl formate	$C_4 H_9. C H O_2$	.9108, 0°	" "
" "	" "	.7972, 106°.9	
Isobutyl formate	" "	.8845, 0°	Pierre and Puchot. Ann. (4), 22, 319.
" "	" "	.850, 34°	
" "	" "	.8224, 59°.8	
" "	" "	.7962, 83°.4	De Heen. Bei. 5, 105.
" "	" "	.8650, 14°	
" "	" "	.7784, 98°	Schiff. G. C. I. 13, 177.
" "	" "	.88543, 0°	Elsässer. A. C. P. 218, 302.
" "	" "	.78287, 97°.9	
Normal amyl formate	$C_5 H_{11}. C H O_2$	.9018, 0°	Gartenmeister. A.C. P. 233, 249.
" " "	" "	.7692, 130°.4	
Isoamyl formate	" "	.884, 15°	Delffs. J. 7, 26.
" "	" "	.8945, 0°	Kopp. A. C. P. 96.
" "	" "	.8743, 21°	
" "	" "	.8809, 15°	Mendelejeff. J. 13, 7.
" "	" "	.8816, 14°	De Heen. Bei. 5, 105.
" "	" "	.7554, 123°.5	Schiff. G. C. I. 13, 177.
" "	" "	.8802, 20°	Brühl. Bei. 4, 782.
" "	" "	.894378, 0°	Elsässer. A. C. P. 218, 302.
" "	" "	.77027, 123°.3	
Normal hexyl formate	$C_6 H_{13}. C H O_2$	.8495, 17°	Frentzel. Ber. 16, 745.
" " "	" "	.8977, 0°	Gartenmeister. A.C. P. 233, 249.
" " "	" "	.7484, 153°.6	
Normal heptyl formate	$C_7 H_{15}. C H O_2$	.8937, 0°	" "
" " "	" "	.7308, 176°.7	
Normal octyl formate	$C_8 H_{17}. C H O_2$	.8929, 0°	" "
" " "	" "	.7156, 198°.1	
Methyl acetate	$C H_3. C_2 H_3 O_2$	.919, 22°	Dumas and Peligot. P. A. 36, 117.
" "	" "	.9328, 0°	Kopp. A. C. P. 96.
" "	" "	.9085, 21°	
" "	" "	.9562, 0°	Kopp. P. A. 72, 271.
" "	" "	.93735, 15°.6	
" "	" "	.86684, 0°	Pierre. C. R. 27, 213.
" "	" "	.940	Grodzki and Krae- mer. Z. A. C. 14, 103.
" "	" "	.9039, 20°	Brühl. Ber. 13, 1530.
" "	" "	.9319, 14°	De Heen. Bei. 5, 105.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl acetate -----	$C_2H_5 \cdot C_2H_3O_2$ -----	.8825 } 55° {	Schiff. G. C. I. 13,
" " -----	" -----	.8826 } -----	177.
" " -----	" -----	.95774, 0° -- } -----	Elsässer. A. C. P.
" " -----	" -----	.88086, 57°.5 } -----	218, 302.
" " -----	" -----	.9424, 0° -----	Winkelmann. P. A.
" " -----	" -----	.9238, 19°.2 -----	(2), 26, 105.
" " -----	" -----	.9643, 0° -----	Henry. C. R. 101,
" " -----	" -----	.8873, 57°.3 } -----	250.
Ethyl acetate -----	$C_2H_5 \cdot C_2H_3O_2$ -----	.866, 7° -----	Gartenmeister. Bei.
" " -----	" -----	.89, 15° -----	9, 766.
" " -----	" -----	.9051, 0° -----	Thénard. Gm. H.
" " -----	" -----	.91046, 0° -- } -----	Liebig.
" " -----	" -----	.89277, 15°.7 } -----	Frankenheim. P. A.
" " -----	" -----	.8926, 15°.9 } -----	72, 427.
" " -----	" -----	.90691, 0° -----	Kopp. P. A. 72, 276.
" " -----	" -----	.906, 17°.5 -----	Pierre. C. R. 27,
" " -----	" -----	.903, 17° -----	213.
" " -----	" -----	.932, 20° -----	Marsson. J. 4, 514.
" " -----	" -----	.9055, 17°.5 -----	Becker. J. 5, 563.
" " -----	" -----	.8922, 15° -----	Goessmann. J. 5,
" " -----	" -----	.8981, 15° -----	563.
" " -----	" -----	.903, 0° -----	Marsson. J. 6, 501.
" " -----	" -----	.868, 24° -----	Delffs. J. 7, 26.
" " -----	" -----	.9068, 15° -----	Mendelejeff. J. 13, 7.
" " -----	" -----	.9007, 20° -----	Pierre and Puchot.
" " -----	" -----	.9026, 14° -----	Ann. (4), 22, 261.
" " -----	" -----	.8220, 74°.3 -----	Léblanc. Ann. (3),
" " -----	" -----	.9227, 0° -----	10, 198.
" " -----	" -----	.9076, 12°.80 -----	Linnemann. A. C.
" " -----	" -----	.8914, 26°.24 -----	P. 160, 195.
" " -----	" -----	.8730, 41°.13 -----	Brühl. Ber. 13, 1530.
" " -----	" -----	.8594, 51°.75 -----	De Heen. Bei. 5, 105.
" " -----	" -----	.8466, 61°.87 -----	Schiff. Ber. 14, 2766.
" " -----	" -----	.8309, 73°.74 -----	Several intermedi- ate values given. Naccari and Pag- liani. Bei. 6, 89.
" " -----	" -----	.9004 -----	
" " -----	" -----	.9012 -----	
" " -----	" -----	.8306 } 75°.5 {	
" " -----	" -----	.8294 } -----	W. I. Clark. Ber.
" " -----	" -----	.92388, 0° -- } -----	16, 1227.
" " -----	" -----	.82673, 77°.1 } -----	Schiff. G. C. I. 13,
" " -----	" -----	.9007 } 20° {	177.
" " -----	" -----	.9047 } -----	Elsässer. A. C. P.
" " -----	" -----	.9253, 0° -----	218, 302.
Propyl acetate -----	$C_3H_7 \cdot C_2H_3O_2$ -----	.910, 0° -----	Winkelmann. P. A.
" " -----	" -----	.8635, 42°.5 } -----	(2), 26, 105.
" " -----	" -----	.8137, 84°.6 } -----	Gartenmeister. Bei.
" " -----	" -----	.910, 0° -----	9, 766.
" " -----	" -----	.8627, 42°.5 } -----	Pierre and Puchot.
" " -----	" -----	.8128, 84°.6 } -----	Z. C. 12, 660.
			Pierre and Puchot.
			Ann. (4), 22, 289.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Propyl acetate -----	$C_3H_7 \cdot C_2H_3O_2$ -----	.913, 0° -----	Rossi. A. C. P. 159, 79.
“ “ -----	“ -----	.8992, 15° -----	Linnemann. A. C. P. 161, 30.
“ “ -----	“ -----	.8856, 20° -----	Brühl. Ber. 13, 1530.
“ “ -----	“ -----	.8871, 14° -----	De Heen. Bei. 5, 105.
“ “ -----	“ -----	.7916 } 101°.8	{ Schiff. G. C. I. 13, 177.
“ “ -----	“ -----	.7918 }	{
“ “ -----	“ -----	.909092, 0° -----	{ Elsässer. A. C. P. 218, 302.
“ “ -----	“ -----	.794388, 100°.8	{
“ “ -----	“ -----	.9093, 0° -----	Gartenmeister. A. C. P. 233, 249.
Butyl acetate-----	$C_4H_9 \cdot C_2H_3O_2$ -----	.9000, 0° -----	Lieben and Rossi. A. C. P. 158, 137.
“ “ -----	“ -----	.8817, 20° -----	
“ “ -----	“ -----	.8659, 40° -----	
“ “ -----	“ -----	.8768, 23° -----	
“ “ -----	“ -----	.9016, 0° -----	Gartenmeister. A. C. P. 233, 249.
“ “ -----	“ -----	.7683, 124°.5	
Isobutyl acetate-----	“ -----	.8845, 16° -----	Wurtz. J. 7, 575.
“ “ -----	“ -----	.892, 0° -----	Lieben. J. 21, 443.
“ “ -----	“ -----	.89096, 0° -----	Chapman and Smith. J. C. S. 22, 160.
“ “ -----	“ -----	.8747, 16° -----	
“ “ -----	“ -----	.83143, 50° -----	
“ “ -----	“ -----	.9052, 0° -----	
“ “ -----	“ -----	.8668, 37°.1	Pierre and Puchot. Ann. (4), 22, 322.
“ “ -----	“ -----	.8328, 68°.9	
“ “ -----	“ -----	.8096, 89°.4	
“ “ -----	“ -----	.7972, 99°.75	
“ “ -----	“ -----	.7589, 112°.7	Schiff. G. C. I. 13, 177.
“ “ -----	“ -----	.892100, 0° -----	{ Elsässer. A. C. P. 218, 302.
“ “ -----	“ -----	.77080, 116°.3	
Normal amyl acetate-----	$C_5H_{11} \cdot C_2H_3O_2$ -----	.8963, 0° -----	Lieben and Rossi. A. C. P. 159, 70.
“ “ “ -----	“ -----	.8792, 20° -----	
“ “ “ -----	“ -----	.8645, 40° -----	
“ “ “ -----	“ -----	.8948, 0° -----	
“ “ “ -----	“ -----	.7461, 147°.6	Gartenmeister. A. C. P. 233, 249.
Methylpropylcarbyl acetate.	“ -----	.9222, 0° -----	Wurtz. Z. C. 11, 490.
Diethylcarbyl acetate -----	“ -----	.909, 0° -----	{ Wagner and Saytzeff. A. C. P. 175, 366.
“ “ -----	“ -----	.893, 16° -----	
Amyl acetate-----	“ -----	.8572, 21° -----	Kopp. A. C. P. 94, 297.
“ “ -----	“ -----	.8765, 0° -----	
“ “ -----	“ -----	.8837, 0° -----	Kopp. A. C. P. 94, 257.
“ “ -----	“ -----	.8692, 15°.1	
“ “ -----	“ -----	.863, 10° -----	Delffs. J. 7, 26.
“ “ -----	“ -----	.8762, 15° -----	Mendelejeff. J. 13, 7.
“ “ -----	“ -----	.8733 } 15°	Schorlemmer. J. 19, 527.
“ “ -----	“ -----	.8752 }	
“ “ Inactive -----	“ -----	.8838, 0° -----	Balbiano. Ber. 9, 1437.
“ “ -----	“ -----	.8561, 14° -----	De Heen. Bei. 5, 105.
“ “ -----	“ -----	.8561, 20° -----	Brühl. Bei. 4, 782.
“ “ -----	“ -----	.7429 } 138°.5	{ Schiff. G. C. I. 13, 177.
“ “ -----	“ -----	.7430 }	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Tertiary amyl acetate ----	$C_5 H_{11} \cdot C_2 H_3 O_2$ ----	.8909, 0° ----	Flawitzky. A. C. P. 179, 349.
" " " ----	" ----	.8738, 19° ----	
Normal hexyl acetate ----	$C_6 H_{13} \cdot C_2 H_3 O_2$ ----	.8890, 17° ----	Franchimont and Zincke. C. N. 24, 263.
" " " ----	" ----	.8902, 0° ----	Gartenmeister. A. C. P. 233, 249.
" " " ----	" ----	.7267, 169°.2	
Secondary hexyl acetate --	" ----	.8778, 0° ----	{ Wanklyn and Er- lenmeyer. J. 16, 522.
" " " ----	" ----	.8310, 50° ----	
Methyldiethylcarbyl ace- tate. " " ----	" ----	.8824, 20° ----	Reformatsky. J. P. C. (2), 36, 340.
" " " ----	" ----	.8772, 25° ----	
" " " ----	" ----	.8735, 30° ----	
" " " ----	" ----	.8679, 35° ----	
Ethylpropylcarbyl ace- tate. " " ----	" ----	.8525, 0° ----	Buff. J. 21, 336.
Methylisobutylcarbylace- tate. " " ----	" ----	.8805, 0° ----	Kuwschinow. Ber. 20, ref. 629.
Methylpropylethol ace- tate. " " ----	" ----	.8717, 25° ----	Lieben and Zeisel. M. C. 4, 33.
Normal heptyl acetate ----	$C_7 H_{15} \cdot C_2 H_3 O_2$ ----	.874, 16° ----	Cross. J. C. S. 32, 123.
" " " ----	" ----	.8891, 0° ----	Gartenmeister. A. C. P. 233, 249.
" " " ----	" ----	.7134, 191°.3	
Isoheptyl acetate ----	" ----	.8605, 16° ----	Three products. Schorlemmer. A. C. P. 136, 271.
" " " ----	" ----	.8707, 16°.5	
" " " ----	" ----	.8868, 19° ----	
Dipropylcarbyl acetate --	" ----	.8742, 0° ----	{ Ustinoff and Saytz- eff. J. P. C. (2), 34, 470.
" " " ----	" ----	.8587, 20° ----	
Methylisoamylcarbylace- tate. " " ----	" ----	.8595, 23° ----	Rohn. A. C. P. 190, 312.
Normal octyl acetate ----	$C_8 H_{17} \cdot C_2 H_3 O_2$ ----	.8717, 16° ----	Zincke. J. 22, 370.
" " " ----	" ----	.8847, 0° ----	Gartenmeister. A. C. P. 233, 249.
" " " ----	" ----	.6981, 210°	
Methyldipropylcarbylace- tate. " " ----	" ----	.8738, 0° ----	{ Gortaloff and Saytzeff. J. P. C. (2), 33, 702.
" " " ----	" ----	.8554, 20° ----	
" Octylene acetate " ----	" ----	.822, 0°	Clermont. J. 17, 517.
" " " ----	" ----	.803, 26°	
Ethyldipropylcarbyl ace- tate. " " ----	$C_9 H_{19} \cdot C_2 H_3 O_2$ ----	.8795, 0° ----	{ Tschebotareff and Saytzeff. J. P. C. (2), 33, 193.
" " " ----	" ----	.8675, 20° ----	
Isomer of myristic acetate --	$C_{16} H_{32} O_2$ ----	.8559, 15° ----	Perkin, Jr. J. C. S. 43, 77.
" " " ----	" ----	.8476, 30° ----	
" " " ----	" ----	.8448, 35° ----	
Cetyl acetate ----	$C_{16} H_{33} \cdot C_2 H_3 O_2$ ----	.858, 20° ----	Dollfus. J. 17, 518.
Methyl propionate ----	$C H_3 \cdot C_3 H_5 O_2$ ----	.9578, 4° ----	Kahlbaum. Ber. 12, 344.
" " " ----	" ----	.8954, 14° ----	De Heen. Bei. 5, 105.
" " " ----	" ----	.8422	{ Schiff. G. C. I. 13, 177.
" " " ----	" ----	.8423	
" " " ----	" ----	.93725, 0° ----	{ Elsässer. A. C. P. 218, 302.
" " " ----	" ----	.836798, 79°.9	
" " " ----	" ----	.922, 15° ----	Israel. A. C. P. 231, 197.
" " " ----	" ----	.9403, 0° ----	Gartenmeister. Bei. 9, 766.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethyl propionate -----	$C_2H_5 \cdot C_3H_5O_2$ -----	.9231, 0° -----	Kopp. A. C. P. 95, 307.
" " -----	" -----	.8949, 26°.3 -----	
" " -----	" -----	.9139, 0° -----	Pierre and Puchot. Ann. (4), 22, 351.
" " -----	" -----	.8625, 45°.1 -----	
" " -----	" -----	.816, 83° -----	Linnemann. A.C.P. 160, 195.
" " -----	" -----	.8964, 16° -----	
" " -----	" -----	.8945, 17° -----	De Heen. Bei. 5, 105.
" " -----	" -----	.9175, 14° -----	
" " -----	" -----	.7961 -----	{ Schiff. G. C. I. 13, 177.
" " -----	" -----	.7963 -----	
" " -----	" -----	.9109, 0° -----	Several intermediate values given. Naccari and Pagliani. Bei. 6, 89.
" " -----	" -----	.8968, 12°.60 -----	
" " -----	" -----	.8832, 24°.57 -----	
" " -----	" -----	.8637, 41°.54 -----	
" " -----	" -----	.8514, 52°.05 -----	
" " -----	" -----	.8365, 64°.46 -----	
" " -----	" -----	.8247, 74°.46 -----	
" " -----	" -----	.8020, 92°.96 -----	
" " -----	" -----	.91238, 0° -----	Elsässer. A. C. P. 218, 302.
" " -----	" -----	.79868, 98°.3 -----	
" " -----	" -----	.91224, 0° -----	Weger. Ber. 16, 2912.
" " -----	" -----	.886 -----	
" " -----	" -----	.8910 -----	Three samples. Israel. A. C. P. 231, 197.
" " -----	" -----	.8900, 19° -----	
Propyl propionate -----	$C_3H_7 \cdot C_3H_5O_2$ -----	.9022, 0° -----	
" " -----	" -----	.8498, 51°.27 -----	
" " -----	" -----	.7944, 100°.6 -----	Pierre and Puchot. Ann. (4), 22, 293.
" " -----	" -----	.7839, 108°.34 -----	
" " -----	" -----	.8885, 13° -----	Linnemann. A. C. P. 161, 32.
" " -----	" -----	.8821, 14° -----	
" " -----	" -----	.7680 -----	De Heen. Bei. 5, 105.
" " -----	" -----	.7683 -----	
" " -----	" -----	.90192, 0° -----	Schiff. G. C. I. 13, 177.
" " -----	" -----	.772008, 122°.2 -----	
" " -----	" -----	.9023, 0° -----	Elsässer. A. C. P. 218, 302.
Butyl propionate -----	$C_4H_9 \cdot C_3H_5O_2$ -----	.8828, 15° -----	Gartenmeister. A. C. P. 233, 249.
" " -----	" -----	.8953, 0° -----	
" " -----	" -----	.7489, 145°.4 -----	Linnemann. Ann. (4), 27, 268.
Isobutyl propionate -----	" -----	.8926, 0° -----	
" " -----	" -----	.8437, 49°.2 -----	Gartenmeister. A. C. P. 233, 249.
" " -----	" -----	.7896, 100°.15 -----	
" " -----	" -----	.7698, 116°.5 -----	Pierre and Puchot. Ann. (4), 22, 324.
" " -----	" -----	.887595, 0° -----	
" " -----	" -----	.74424, 136°.8 -----	Elsässer. A. C. P. 218, 302.
Amyl propionate -----	$C_5H_{11} \cdot C_3H_5O_2$ -----	.8700, 14° -----	
" " -----	" -----	.7295, 160° -----	De Heen. Bei. 5, 105.
" " -----	" -----	.887672, 0° -----	
" " -----	" -----	.73646, 160°.2 -----	Schiff. G. C. I. 13, 177.
Normal heptyl propionate -----	$C_7H_{15} \cdot C_3H_5O_2$ -----	.8846, 0° -----	
" " -----	" -----	.6946, 208° -----	Elsässer. A. C. P. 218, 302.
Normal octyl propionate -----	$C_8H_{17} \cdot C_3H_5O_2$ -----	.8833, 0° -----	
" " -----	" -----	.6860, 226°.4 -----	Gartenmeister. A. C. P. 233, 249.
Methyl butyrate -----	$C H_3 \cdot C_4H_7O_2$ -----	.92098, 0° -----	
" " -----	" -----	.9045, 15°.5 -----	Kopp. P. A. 72, 280.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl butyrate-----	$C_3H_7 \cdot C_4H_7O_2$ -----	1.02928, 0° ----	Pierre. C. R. 27, 213.
" "-----	"-----	.9091, 0° ----	Kopp. A. C. P. 95, 307.
" "-----	"-----	.8793, 30°.3 }-----	
" "-----	"-----	.9475, 4° ----	Kahlbaum. Ber. 12, 344.
" "-----	"-----	.8962, 20° ----	Brühl. Ber. 13. 1530 $\frac{1}{2}$
" "-----	"-----	.91939, 0° ----	} Elsässer. A. C. P. 218, 302.
" "-----	"-----	.80261, 102°.3 }-----	
" "-----	"-----	.9194, 0° ----	Gartenmeister. A. C. P. 233, 249.
Methyl isobutyrate-----	"-----	.9056, 0° ----	} Pierre and Puchot. B. S. C. 19, 72.
" "-----	"-----	.8625, 38°.65 }-----	
" "-----	"-----	.815, 78°.6 }-----	} Elsässer. A. C. P. 218, 302.
" "-----	"-----	.911181, 0° ----	
" "-----	"-----	.80397, 92°.3 }-----	} Linnemann. A. C. P. 160, 195.
Ethyl butyrate-----	$C_2H_5 \cdot C_4H_7O_2$ -----	.9003, 18° ----	
" "-----	"-----	.8990, 17° ----	} Brühl. Ber. 14, 2800.
" "-----	"-----	.8892, 20° ----	
" "-----	"-----	.7703 }-----	{ Schiff. G. C. I. 13, 177.
" "-----	"-----	.7705 }-----	
" "-----	"-----	.90193, 0° ----	Pierre. C. R. 27, 213.
" "-----	"-----	.8894, 15° ----	Mendelejeff. J. 13, 7.
" "-----	"-----	.8942, 0° ----	Frankland and Duppa. J. 18, 306.
" "-----	"-----	.89957, 0° ----	} Elsässer. A. C. P. 218, 302.
" "-----	"-----	.76940, 119°.9 }-----	
" "-----	"-----	.9004, 0° ----	Gartenmeister. A. C. P. 233, 249.
Ethyl isobutyrate-----	"-----	.90412, 0° ----	} Kopp. P. A. 72, 287.
" "-----	"-----	.89065, 13° ----	
" "-----	"-----	.890, 0° ----	} Pierre and Puchot. B. S. C. 19, 72.
" "-----	"-----	.871, 18°.8 }-----	
" "-----	"-----	.831, 55°.6 }-----	} Schiff. G. C. I. 13, 177.
" "-----	"-----	.7794, 100°.1 }-----	
" "-----	"-----	.7681, 110°.1 }-----	} Elsässer. A. C. P. 218, 302.
" "-----	"-----	.890367, 0° ----	
" "-----	"-----	.77725, 110°.1 }-----	} Linnemann. A. C. P. 161, 33.
Propyl butyrate-----	$C_3H_7 \cdot C_4H_7O_2$ -----	.8789, 15° ----	
" "-----	"-----	.89299, 0° ----	} Elsässer. A. C. P. 218, 302.
" "-----	"-----	.745694, 142°.7 }-----	
Propyl isobutyrate-----	"-----	.8872, 0° ----	} Pierre and Puchot. Ann. (4), 22, 295.
" "-----	"-----	.8402, 47°.24 }-----	
" "-----	"-----	.7842, 100°.25 }-----	} Elsässer. A. C. P. 218, 302.
" "-----	"-----	.7525, 128°.75 }-----	
" "-----	"-----	.884317, 0° ----	} Silva. Z. C. 12, 508.
" "-----	"-----	.74647, 133°.9 }-----	
Isopropyl butyrate-----	"-----	.8787, 0° ----	} Lieben and Rossi. A. C. P. 158, 137.
" "-----	"-----	.8652, 13° ----	
Butyl butyrate-----	$C_4H_9 \cdot C_4H_7O_2$ -----	.8885, 0° ----	} Linnemann. Ann. (4), 27, 268.
" "-----	"-----	.8717, 20° ----	
" "-----	"-----	.8579, 40° ----	} Gartenmeister. A. C. P. 233, 249.
" "-----	"-----	.8760, 12° ----	
" "-----	"-----	.8878, 0° ----	} Gartenmeister. A. C. P. 233, 249.
" "-----	"-----	.7264, 165°.7 }-----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Isobutyl butyrate-----	$C_4H_9 \cdot C_4H_7O_2$ -----	.881778, 0°----	} Elsässer. A. C. P. 218, 302.
" "-----	"-----	.71630, 156°.9----	
" "-----	"-----	.8798, 0°----	} Grunzweig. B.S.C. 18, 125.
" "-----	"-----	.86635, 16°----	
" "-----	"-----	.81838, 98°.4----	
Isobutyl isobutyrate-----	"-----	.8719, 0°----	} Pierre and Puchot. Ann. (4), 22, 326.
" "-----	"-----	.8238, 50°.8----	
" "-----	"-----	.7753, 99°.8----	
" "-----	"-----	.7439, 128°.3----	
" "-----	"-----	.874957, 6°----	} Elsässer. A. C. P. 218, 302.
" "-----	"-----	.73281, 146°.6----	
" "-----	"-----	.87519, 0°----	} Grunzweig. B.S.C. 18, 125.
" "-----	"-----	.86064, 15°----	
" "-----	"-----	.81192, 98°.4----	
Normal amyl butyrate-----	$C_5H_{11} \cdot C_4H_7O_2$ -----	.8832, 0°----	} Gartenmeister. A.C. P. 233, 249.
" "-----	"-----	.7092, 184°.8----	
Amyl butyrate-----	"-----	.8683, 15°----	} Mendelejeff. J. 13, 7. Delfs. J. 7, 26.
" "-----	"-----	.852, 15°----	
" "-----	"-----	.882306, 0°----	} Elsässer. A. C. P. 218, 302.
" "-----	"-----	.71148, 178°.6----	
" "-----	"-----	.873, 10°----	} DeHeen. Bei. 10, 313.
Amyl isobutyrate-----	"-----	.8769, 0°----	
" "-----	"-----	.8264, 55°.4----	} Pierre and Puchot. Ann. (4), 22, 343.
" "-----	"-----	.7839, 100°.2----	
" "-----	"-----	.7446, 139°.5----	
" "-----	"-----	.875965, 0°----	} Elsässer. A. C. P. 218, 302.
" "-----	"-----	.70662, 168°.8----	
Normal hexyl butyrate-----	$C_6H_{13} \cdot C_4H_7O_2$ -----	.8825, 0°----	} Gartenmeister. A.C. P. 233, 249.
" "-----	"-----	.6963, 205°.1----	
Normal heptyl butyrate-----	$C_7H_{15} \cdot C_4H_7O_2$ -----	.8827, 0°----	} " "
" "-----	"-----	.6869, 225°.2----	
Normal octyl butyrate-----	$C_8H_{17} \cdot C_4H_7O_2$ -----	.8794, 0°----	} " "
" "-----	"-----	.6751, 242°.2----	
Cetyl butyrate-----	$C_{16}H_{33} \cdot C_4H_7O_2$ -----	.856, 20°----	} Dollfus. J. 17, 518. Cahours and Demar- çay. C. R. 89, 331.
Methyl valerate-----	$C_2H_5 \cdot C_5H_9O_2$ -----	.895, 17°----	
" "-----	"-----	.9097, 0°----	} Gartenmeister. Bei. 9, 766.
" "-----	"-----	.7767, 127°.3----	
Methyl isovalerate-----	"-----	.8960, 0°----	} Kopp. A. C. P. 96.
" "-----	"-----	.8806, 16°----	
" "-----	"-----	.901525, 0°----	} Kopp. P. A. 72, 291.
" "-----	"-----	.88687, 15°----	
" "-----	"-----	.88662, 15°.3----	
" "-----	"-----	.9005, 0°----	} Pierre and Puchot. Ann. (4), 22, 349.
" "-----	"-----	.8581, 41°.5----	
" "-----	"-----	.8343, 64°.3----	
" "-----	"-----	.7945, 100°.1----	
" "-----	"-----	.8908, 16°----	} Renard. Ann. (6), 1, 223.
" "-----	"-----	.885465, 17°----	
" "-----	"-----	.8795, 20°----	} Schmidt and Sacht- leben. J. C. S. 36, 139.
" "-----	"-----	.90065, 0°----	
" "-----	"-----	.77518, 116°.7----	} Elsässer. A. C. P. 218, 302.
Ethyl valerate-----	$C_2H_5 \cdot C_5H_9O_2$ -----	.894, 0°----	
" "-----	"-----	.8765, 20°----	} Lieben and Rossi. A. C. P. 165, 109.
" "-----	"-----	.8616, 40°----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethyl valerate-----	$C_2H_5 \cdot C_5H_9O_2$ -----	.878, 18°.5----	Cahours and Demarçay. C. R. 89, 331.
“ “-----	“-----	.8939, 0°-----	Gartenmeister. Bei. 9, 766.
“ “-----	“-----	.7443, 144°.7-----	
Ethyl isovalerate-----	“-----	.894, 13°-----	Otto. A. C. P. 25, 62.
“ “-----	“-----	.869, 14°-----	Berthelot. J. 7, 441.
“ “-----	“-----	.8829, 0°-----	Kopp. A. C. P. 96.
“ “-----	“-----	.8659, 18°-----	
“ “-----	“-----	.886, 0°-----	Pierre and Puchot. Ann. (4), 22, 353.
“ “-----	“-----	.832, 55°.7-----	
“ “-----	“-----	.7843, 99°.63-----	Brühl. Bei. 4, 782.
“ “-----	“-----	.7582, 122°.5-----	
“ “-----	“-----	.8661, 20°-----	Elsässer. A. C. P. 218, 302.
“ “-----	“-----	.88514, 0°-----	
“ “-----	“-----	.74764, 134°.3-----	Renard. Ann. (6), 1, 223.
“ “-----	“-----	.8743, 16°-----	
“ “-----	“-----	.8882, 0°-----	Frankland and Duppa. J. 20, 396.
“ “-----	“-----	.87166, 18°-----	
Ethyl trimethylacetate-----	“-----	.8773, 0°-----	Friedel and Silva. J. C. S. (2), 11, 1127.
“ “-----	“-----	.8535, 25°-----	
“ “-----	“-----	.875, 0°-----	Butlerow. B. S. C. 23, 27.
Ethyl methylethylacetate-----	“-----	.877, 15°-----	Israel. A. C. P. 231, 197.
Propyl valerate-----	$C_3H_7 \cdot C_5H_9O_2$ -----	.8888, 0°-----	Gartenmeister. Bei. 9, 766.
“ “-----	“-----	.7264, 167°.5-----	
Propyl isovalerate-----	“-----	.8862, 0°-----	Pierre and Puchot. Ann. (4), 22, 297.
“ “-----	“-----	.8387, 50°.8-----	
“ “-----	“-----	.7906, 100°.15-----	Elsässer. A. C. P. 218, 302.
“ “-----	“-----	.7755, 113°.7-----	
“ “-----	“-----	.880915, 0°-----	Silva. Z. C. 12, 508.
“ “-----	“-----	.727405, 155°.9-----	
Isopropyl isovalerate-----	“-----	.8702, 0°-----	Gartenmeister. Bei. 9, 766.
“ “-----	“-----	.8538, 17°-----	
Butyl valerate-----	$C_4H_9 \cdot C_5H_9O_2$ -----	.8847, 0°-----	Pierre and Puchot. Ann. (4), 22, 330.
“ “-----	“-----	.7095, 185°.8-----	
Isobutyl isovalerate-----	“-----	.8884, 0°-----	Elsässer. A. C. P. 218, 302.
“ “-----	“-----	.8438, 49°.7-----	
“ “-----	“-----	.7966, 100°-----	Gartenmeister. Bei. 9, 766.
“ “-----	“-----	.7428, 155°.8-----	
“ “-----	“-----	.873599, 0°-----	Kopp. A. C. P. 94, 257.
“ “-----	“-----	.70549, 168°.7-----	
Normal amyl valerate-----	$C_5H_{11} \cdot C_5H_9O_2$ -----	.8812, 0°-----	Mendelejeff. J. 13, 7.
“ “-----	“-----	.6982, 203°.7-----	
Amyl isovalerate-----	“-----	.8793, 0°-----	Pierre and Puchot. Ann. (4), 22, 346.
“ “-----	“-----	.8645, 17°.7-----	
“ “-----	“-----	.8596, 15°-----	Balbiano. Ber. 9, 1437.
“ “-----	“-----	.874, 0°-----	
“ “-----	“-----	.832, 50°.67-----	Renard. Ann. (6), 1, 223.
“ “-----	“-----	.787, 100°-----	
“ “-----	“-----	.740, 149°.5-----	Ley. Ber. 6, 1362.
“ “ Inactive-----	“-----	.8700, 0°-----	
“ “-----	“-----	.8633, 16°-----	
“ “-----	“-----	.869, 15°-----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Amyl isovalerate -----	$C_5H_{11} \cdot C_5H_9O_2$ -----	.8658, 20° -----	Brühl. Bei. 4, 782.
" " -----	" " -----	.863, 10° -----	De Heen. Bei. 11, 313.
Normal hexyl valerate ---	$C_6H_{13} \cdot C_5H_9O_2$ -----	.8797, 0° ---	Gartenmeister. Bei. 9, 766.
" " " -----	" " -----	.6823, 223°.8 } -----	
Normal heptyl valerate ---	$C_7H_{15} \cdot C_5H_9O_2$ -----	.8786, 0° ---	
" " " -----	" " -----	.6708, 243°.6 } -----	" "
Normal octyl valerate ---	$C_8H_{17} \cdot C_5H_9O_2$ -----	.8784, 0° ---	" "
" " " -----	" " -----	.6618, 260°.2 } -----	
Octyl isovalerate -----	" " -----	.8624, 16° -----	Zincke. J. 22, 371.
Cetyl isovalerate -----	$C_{16}H_{33} \cdot C_5H_9O_2$ -----	.852, 20° -----	Dollfus. J. 17, 518.
Methyl caproate -----	$CH_3 \cdot C_6H_{11}O_2$ -----	.8977, 18° -----	Fehling. A. C. P. 53, 399.
" " -----	" " -----	.889, 19° -----	Cahours and Demarçay. C. R. 89, 331.
" " -----	" " -----	.9039, 0° -----	Gartenmeister. Bei. 9, 766.
" " -----	" " -----	.7536, 149°.6 } -----	
Ethyl caproate -----	$C_2H_5 \cdot C_6H_{11}O_2$ -----	.882, 18° -----	Lerch. A. C. P. 49, 212.
" " -----	" " -----	.8765, 17°.5 -----	Franchimont and Zincke. A. C. P. 163, 193.
" " -----	" " -----	.8898, 0° -----	Lieben and Rossi. A. C. P. 165, 118.
" " -----	" " -----	.8732, 20° -----	
" " -----	" " -----	.8594, 40° -----	
" " -----	" " -----	.8898, 0° -----	Lieben. A. C. P. 170, 89.
" " -----	" " -----	.8728, 20° -----	
" " -----	" " -----	.8596, 40° -----	
" " -----	" " -----	.878, 19° -----	Cahours and Demarçay. C. R. 89, 331.
" " -----	" " -----	.8888, 0° -----	Gartenmeister. Bei. 9, 766.
" " -----	" " -----	.7269, 166°.6 } -----	
Ethyl isocaproate -----	" " -----	.887, 0° -----	Lieben and Rossi. A. C. P. 165, 118.
" " -----	" " -----	.8705, 20° -----	
" " -----	" " -----	.8566, 40° -----	
Ethyl diethylacetate -----	" " -----	.8822, 0° -----	Frankland and Duppa. J. 18, 308.
" " -----	" " -----	.8826, 0° -----	Saytzeff. Ber. 11, 512.
" " -----	" " -----	.8686, 18° -----	
Ethylmethylpropylacetate	" " -----	.8816, 0° -----	" "
" " -----	" " -----	.8670, 18° -----	
" " -----	" " -----	.8841, 0° -----	Lieben and Zeisel. M. C. 4, 26.
Propyl caproate -----	$C_3H_7 \cdot C_6H_{11}O_2$ -----	.8844, 0° -----	Gartenmeister. Bei. 9, 766.
" " -----	" " -----	.7097, 185°.5 } -----	
Butyl caproate -----	$C_4H_9 \cdot C_6H_{11}O_2$ -----	.8824, 0° -----	" "
" " -----	" " -----	.6978, 204°.3 } -----	
Hexyl caproate -----	$C_6H_{13} \cdot C_6H_{11}O_2$ -----	.865 -----	Franchimont and Zincke. C. N. 24, 263.
Methylethylpropyl methylethylpropionate.	" " -----	.867, 15° -----	Romburgh. J. C. S. 52, 228.
Normal heptyl caproate ---	$C_7H_{15} \cdot C_6H_{11}O_2$ -----	.8769, 0° ---	Gartenmeister. Bei. 9, 766.
" " " -----	" " -----	.6594, 259°.4 } -----	
Normal octyl caproate ---	$C_8H_{17} \cdot C_6H_{11}O_2$ -----	.8748, 0° ---	" "
" " " -----	" " -----	.6509, 275°.2 } -----	
Methyl oenanthate -----	$CH_3 \cdot C_7H_{13}O_2$ -----	.889, 19° -----	Cahours and Demarçay. C. R. 89, 331.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl oenanthate-----	$C H_3. C_7 H_{13} O_2$ -----	.8981, 0° --- }	Gartenmeister. Bei.
“ “-----	“-----	.7325, 172°.1 } 9, 766.	
Methyl isoöenanthate-----	“-----	.8840, 15° -----	Poetsch. A. C. P.
“ “-----	“-----	.8790, 15° -----	218, 56.
Ethyl oenanthate-----	$C_2 H_5. C_7 H_{13} O_2$ -----	.874, 24° -----	Hecht. A. C. P.
“ “-----	“-----	.8735, 16° -----	209, 324.
“ “-----	“-----	.871, 21° -----	Franchimont. A. C.
“ “-----	“-----	.877, 16°.5-----	P. 165, 237.
“ “-----	“-----	.8879, 0° --- }	Grimshaw and
“ “-----	“-----	.8716, 20° --- }	Schorlemmer. A.
“ “-----	“-----	.8589, 40° --- }	C. P. 170, 137.
“ “-----	“-----	.87163 } 15°--	Mehlis. A. C. P.
“ “-----	“-----	.87199 } 15°--	185, 366.
“ “-----	“-----	.86477 } 25°--	Cahours and Demar-
“ “-----	“-----	.86487 } 25°--	çay. C. R. 89, 331.
“ “-----	“-----	.8861, 0° --- }	Lieben and Janecek.
“ “-----	“-----	.7105, 187°.1 }	J. R. C. 5, 156.
Ethyl isoöenanthate-----	“-----	.8720, 15° -----	
“ “-----	“-----	.8685, 15° --- }	Perkin. J. P. C.
“ “-----	“-----	.8570, 27° --- }	(2), 32, 523.
Propyl oenanthate-----	$C_3 H_7. C_7 H_{13} O_2$ -----	.8824, 0° --- }	Gartenmeister. Bei.
“ “-----	“-----	.6965, 206°.4 }	9, 766.
Propyl isoöenanthate-----	“-----	.8635, 19° -----	Hecht. A. C. P. 209,
Isopropyl isoöenanthate-----	“-----	.859, 19° -----	324.
Butyl oenanthate-----	$C_4 H_9. C_7 H_{13} O_2$ -----	.8807, 0° --- }	Hecht. A. C. P. 209,
“ “-----	“-----	.6839, 225°.1 }	325.
Normal heptyl oenanthate-----	$C_7 H_{15}. C_7 H_{13} O_2$ -----	.870, 16° -----	Gartenmeister. Bei.
“ “-----	“-----	.86522, 15° --- }	9, 766.
“ “-----	“-----	.85933, 25° --- }	Cross. J. C. S. 32,
“ “-----	“-----	.8807, 0° --- }	123.
“ “-----	“-----	.6839, 225°.1 }	Perkin. J. P. C.
Normal octyl oenanthate-----	$C_8 H_{17}. C_7 H_{13} O_2$ -----	.8757, 0° --- }	(2), 32, 523.
“ “-----	“-----	.6419, 290°.4 }	Gartenmeister. Bei.
Methyl caprylate-----	$C H_3. C_8 H_{15} O_2$ -----	.882-----	9, 766.
“ “-----	“-----	.887, 18° -----	“ “
“ “-----	“-----	.8942, 0° --- }	Fehling. A. C. P.
“ “-----	“-----	.7163, 192°.9 }	53, 399.
Ethyl caprylate-----	$C_2 H_5. C_8 H_{15} O_2$ -----	.8738, 15° -----	Cahours and Demar-
“ “-----	“-----	.8728, 16° -----	çay. C. R. 89, 331.
“ “-----	“-----	.878, 17° -----	Gartenmeister. Bei.
“ “-----	“-----	.8842, 0° --- }	9, 776.
“ “-----	“-----	.6980, 205°.8 }	Fehling. A. C. P. 53,
			399.
			Zincke. J. 22, 373.
			Cahours and Demar-
			çay. C. R. 89, 331.
			Gartenmeister. Bei.
			9, 766.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Propyl caprylate -----	$C_3 H_7 \cdot C_8 H_{15} O_2$ -----	.8805, 0° -----	Gartenmeister. Bei. 9, 766.
" " -----	" " -----	.6867, 224°.7 } -----	
Butyl caprylate -----	$C_4 H_9 \cdot C_8 H_{15} O_2$ -----	.8797, 0° -----	
" " -----	" " -----	.6745, 240°.5 } -----	" "
Normal heptyl caprylate -----	$C_7 H_{15} \cdot C_8 H_{15} O_2$ -----	.8754, 0° -----	" "
" " " -----	" " -----	.6405, 289°.8 } -----	
Normal octyl caprylate -----	$C_8 H_{17} \cdot C_8 H_{15} O_2$ -----	.8625, 16° -----	
" " " -----	" " -----	.8755, 0° -----	Zincke. J. 22, 371.
" " " -----	" " -----	.6318, 305°.9 } -----	Gartenmeister. Bei. 9, 766.
Methyl pelargonate -----	$C H_3 \cdot C_9 H_{17} O_2$ -----	.8765, 17°.5 -----	Zincke and Franchi- mont. A.C.P. 164, 333.
Ethyl pelargonate -----	$C_2 H_5 \cdot C_9 H_{17} O_2$ -----	.86 -----	Cahours. J. 3, 401.
" " -----	" " -----	.8725, 15°.5 -----	Delffs. J. 7, 26.
" " -----	" " -----	.8655, 17°.5 -----	Zincke and Franchi- mont. A.C.P. 164, 333.
" " -----	" " -----	.85307 -----	With acid from six sources. Berg- mann. Arch. Pharm. 22, 331.
" " -----	" " -----	.86231 -----	
" " -----	" " -----	.86503 -----	
" " -----	" " -----	.86402 -----	
" " -----	" " -----	.86376 -----	
" " -----	" " -----	.86209 -----	
" " -----	" " -----	.87033, 15° -----	Perkin. J. P. C. (2), 32, 523.
" " -----	" " -----	.86407, 25° -----	
Ethyl isononylate -----	" " -----	.86406, 17° -----	Kullhem. A. C. P. 173, 319.
Ethyl rutylate -----	$C_2 H_5 \cdot C_{10} H_{19} O_2$ -----	.862 -----	Rowney. J. 4, 443.
Ethyl laurate -----	$C_2 H_5 \cdot C_{12} H_{23} O_2$ -----	.86, 20° -----	Görgey. J. 1, 561.
" " -----	" " -----	.8671, 19° -----	Delffs. J. 7, 26.
Ethyl myristate -----	$C_2 H_5 \cdot C_{14} H_{27} O_2$ -----	.864 -----	Playfair. A.C.P. 37, 153.

6th. Aldehydes of the Acetic Series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Acetic aldehyde. B. 20°.8	$C_2 H_4 O$ -----	.7900, 18° -----	Liebig. A. C. P. 14, 132.
" " -----	" -----	.79442, 5°.1 } -----	Kopp. P. A. 72, 235.
" " -----	" -----	.79388, 5°.6 } -----	
" " -----	" -----	.80092, 0° -----	
" " -----	" -----	.80551, 0° -----	Pierre. C. R. 27, 213.
" " -----	" -----	.796, 15° -----	Guckelberger. J. 1, 848.
" " -----	" -----	.8217, 5°—10° -----	Regnault. P. A. 62, 50.
" " -----	" -----	.8173, 10°—15° -----	
" " -----	" -----	.8130, 15°—20° -----	
" " -----	" -----	.7771, 21° -----	Ramsay. J. C. S. 35, 463.
" " -----	" -----	.807, 0° -----	Wurtz.
" " -----	" -----	.7932, 10° -----	Landolt.
" " -----	" -----	.7799, 20° -----	Brühl. Bei. 4, 782.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Acetic aldehyde	$C_2 H_4 O$	.79509, 10°	Perkin. J. P. C. (2), 32, 523.
"	"	.79138, 13°	
"	"	.78761, 16°	
"	"	.81312, —5°	
"	"	.80561, 0°	Perkin. J. C. S. 51, 808.
"	"	.80058, 4°	
"	"	.79520, 8°	
"	"	.78826, 13°	
Paraldehyde. B. 124°	$(C_2 H_4 O)_3$	.998, 15°	Kekulé and Zincke. Z. C. 13, 560.
"	"	.9943	Two lots. Brühl. A. C. P. 203, 1.
"	"	.9971	
"	"	.8737	{ Schiff. G. C. I. 13, 177.
"	"	.8739	
"	"	.9909, 19°	Gladstone. Bei. 9, 249.
"	"	.9982	Louguinine. Ber. 19, ref. 2.
"	"	.99925, 15°	Perkin. J. P. C. (2), 32, 523.
"	"	.99003, 25°	
Isomerofaldehyde. B. 110°	$(C_2 H_4 O)_n$	1.033, 0°	Bauer. J. 13, 436.
Propionic aldehyde. B. 49°.5.	$C_3 H_6 O$	.790, 15°	Guckelberger. J. 1, 848.
"	"	.8284, 0°	Michaelson. J. 17, 336.
"	"	.804, 17°	Rossi. A. C. P. 159, 79.
"	"	.832, 0°	Pierre and Puchot. Ann. (4), 22, 298. Linnemann. A.C.P. 161, 23.
"	"	.8192, 9°.7	
"	"	.7898, 32°.6	
"	"	.8074, 21°	
"	"	.8066, 20°	Brühl. Ber. 13, 1527.
"	"	.80648, 15°	Perkin. J. P. C. (2), 32, 523.
"	"	.79664, 25°	
Butyric aldehyde. B. 75°	$C_4 H_8 O$	.821, 22°	Chancel. C. R. 19, 1440.
"	"	.8341, 0°	Michaelson. J. 17, 336.
"	"	.8170, 20°	Brühl. A. C. P. 203, 1.
"	"	.80, 15°	Guckelberger. J. 1, 849.
Isobutyric aldehyde. B. 63°	"	.8226, 0°	Pierre and Puchot. Z. C. 13, 255.
"	"	.7919, 27°.75	
"	"	.7638, 50°.4	Urech. Ber. 12, 1744. Linnemann. Ann. (4), 27, 268.
"	"	.7950, 20°	
"	"	.803, 20°	Brühl. A.C.P. 203, 1.
"	"	.7938, 20°	Fossek. M. C. 4, 662.
"	"	.8057, 0°	
"	"	.7898, 20°	Perkin. J. P. C. (2), 32, 523.
"	"	.79722, 15°	
"	"	.78787, 26°	Urech. Ber. 12, 1744.
Polymer of isobutyric aldehyde.	$(C_4 H_8 O)_n$	.969, 24°	
Isovaleric aldehyde. B. 92°.5.	$C_5 H_{10} O$	.818	Trautwein.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Isovaleric aldehyde -----	$C_5 H_{10} O$ -----	.820, 22° -----	Chancel. J. P. C. 36, 447.
“ “ -----	“ -----	.8009, 20° -----	Personne. J. 7, 654.
“ “ -----	“ -----	.8224, 0° -----	Kopp. A. C. P. 94, 257.
“ “ -----	“ -----	.8057, 17°.4 -----	
“ “ -----	“ -----	.8209, 0° -----	Pierre and Puchot. Ann. (4), 22, 340.
“ “ -----	“ -----	.778, 43°.4 -----	
“ “ -----	“ -----	.7485, 71°.9 -----	
“ “ -----	“ -----	.768, 12°.5 -----	A. Schröder. Z. C. 14, 510.
“ “ -----	“ -----	.7984, 20° -----	Brühl. Bei. 4, 782.
“ “ -----	“ -----	.8061, 25° -----	Gladstone. Bei. 9, 249.
“ “ -----	“ -----	.7998, 20° -----	Landolt. P. A. 122, 556.
“ “ -----	“ -----	.80405, 15° -----	Perkin. J. P. C. (2), 32, 523.
“ “ -----	“ -----	.79607, 25° -----	
Polymer of valeral. B. 215°	$(C_5 H_{10} O)_n$ -----	.90 -----	Wanklyn. J. 22, 530.
Isomer of capraldehyde. B. 180°—185°.	$C_6 H_{12} O$ -----	.842, 15° -----	Fittig. J. 13, 319.
Oenanthic aldehyde, or oenanthol. B. 154°.	$C_7 H_{14} O$ -----	.8271, 7° -----	Bussy. J. P. C. 37, 92.
“ “ -----	“ -----	.827, 17° -----	Williamson. J. 1, 565.
“ “ -----	“ -----	.823, 16° -----	Cross. J. C. S. 32, 123.
“ “ -----	“ -----	.8495, 20° -----	Brühl. A. C. P. 203, 1.
“ “ -----	“ -----	.8231, 15° -----	Perkin, Jr. Ber. 15, 2802.
“ “ -----	“ -----	.8128, 30° -----	
“ “ -----	“ -----	.8099, 35° -----	
“ “ -----	“ -----	.82264, 15° -----	Perkin. J. P. C. (2), 32, 523.
“ “ -----	“ -----	.81578, 25° -----	
Isomer of oenanthol. B. 161°—164°.	“ -----	.835, 14° -----	Fittig. J. 13, 319.
Caprylic aldehyde. B. 178°	$C_8 H_{16} O$ -----	.818, 19° -----	Bouis. J. 8, 524.
“ “ -----	“ -----	.820 -----	Limpricht. A. C. P. 93, 242.
Euodyl aldehyde. B. 213.	$C_{11} H_{22} O$ -----	.8497, 15° -----	Williams. J. 11, 443.
Isomer of myristic aldehyde. “ “ -----	$C_{14} H_{28} O$ -----	.8274, 30° -----	Perkin, Jr. J. C. S. 43, 71.
“ “ -----	“ -----	.8258, 35° -----	
Derivative of the foregoing compound. “ -----	$C_{21} H_{40} O$ -----	.8744, 15° -----	Perkin, Jr. J. C. S. 43, 72.
“ “ -----	“ -----	.8665, 30° -----	
“ “ -----	“ -----	.8637, 35° -----	

7th. Ketones of the Paraffin Series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Dimethyl ketone, or acetone. B. 56°.5.	$C H_3. C O. C H_3$ ----	.7921, 18° ----	Liebig. Gm. H.
" " " ----	" ----	.8144, 0° ----	Kopp. P. A. 72, 239.
" " " ----	" ----	.79945, 13°.9	
" " " ----	" ----	.790, 15° ----	Linnemann. A. C. P. 143, 349.
" " " ----	" ----	.8008, 15° ----	Mendelejeff. J. 13, 7.
" " " ----	" ----	.7938, 18° ----	Linnemann. A. C. P. 161, 18.
" " " ----	" ----	.7975, 15° ----	
" " " ----	" ----	.7998, 15° ----	Grodzki and Krämer. Z. A. C. 14, 103.
" " " ----	" ----	.81858, 0° ----	Thorpe. J. C. S. 37, 371.
" " " ----	" ----	.75369, 56°.53	
" " " ----	" ----	.7920, 20° ----	Brühl. Ber. 13, 1527.
" " " ----	" ----	.8125, 0° ----	Zander. A. C. P. 214, 181.
" " " ----	" ----	.7489, 56°.3	
" " " ----	" ----	.7506, 56° ----	Schiff. G. C. I. 13, 177.
" " " ----	" ----	.79652, 15° ----	Perkin. J. P. C. (2), 32, 523.
" " " ----	" ----	.78669, 25° ----	
Methyl ethyl ketone, or methyl acetone. B. 78°.	$C H_3. C O. C_2 H_5$ ----	.838, 19° ----	Fittig. J. 12, 341.
" " " ----	" ----	.8125, 13° ----	Frankland and Duppa. J. 18, 309.
" " " ----	" ----	.824, 0° ----	Popoff. J. 20, 399.
" " " ----	" ----	.8063, 15°.3	Grimm. Z. C. 14, 174.
" " " ----	" ----	.8045, 19°.8	Schramm. Ber. 16, 1581.
Diethyl ketone, or propione. B. 104°.	$C_2 H_5. C O. C_2 H_5$ ----	.811, 11°.5	Genther. J. 20, 455.
" " " ----	" ----	.8145, 0° ----	Chapman and Smith. J. 20, 453.
" " " ----	" ----	.8015, 15° ----	
" " " ----	" ----	.813, 20° ----	Smith. B. S. C. 18, 321.
" " " ----	" ----	.829, 0° ----	{ Wagner and Saytzeff. A. C. P. 179, 323.
" " " ----	" ----	.811, 19° ----	
" " " ----	" ----	.8335, 0° ----	Chancel. C. R. 99, 1055.
Methyl propyl ketone. B. 103°.	$C H_3. C O. C_3 H_7$ ----	.8078, 18°.5	Grimm. Z. C. 14, 174.
" " " ----	" ----	.827, 0° ----	Friedel. J. 11, 295.
" " " ----	" ----	.842, 19° ----	Fittig. J. 12, 341.
" " " ----	" ----	.8132, 13° ----	Frankland and Duppa. J. 18, 307.
" " " ----	" ----	.8040, 22° ----	
" " " ----	" ----	.815, 17°.5	Popoff. A. C. P. 161, 285.
" " " ----	" ----	.828, 0° ----	{ Wagner and Saytzeff. A. C. P. 179, 323.
" " " ----	" ----	.810, 19° ----	
" " " ----	" ----	.8264, 0° ----	Chancel. C. R. 99, 1055.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl propyl ketone----	$C H_3 \cdot C O \cdot C_3 H_7$ ----	.81238 } 15° }	Perkin. J. P. C. (2), 32, 523.
" " "-----	"-----	.81233 } 25° }	
" " "-----	"-----	.80447 } 25° }	
" " "-----	"-----	.80423 } 25° }	
Methyl isopropyl ketone. B. 95°.	"-----	.8099, 13°-----	Frankland and Dup- pa. J. 18, 309.
" " "-----	"-----	.815, 15°-----	Münch. A. C. P. 180, 337.
" " "-----	"-----	.822, 0°-----	Wischnegradsky. A. C. P. 190, 341.
" " "-----	"-----	.804, 19°-----	
" " "-----	"-----	.8123, 0°-----	Winogradow. A. C. P. 191, 125.
" " "-----	"-----	.8051, 19°-----	
Ketone from amylene bro- mide. B. 76°—81°.	$C_5 H_{10} O$ -----	.832, 0°-----	Bouchardat. Ber. 14, 2261.
Ethyl propyl ketone. B. 123°.	$C_2 H_5 \cdot C O \cdot C_3 H_7$ ----	.818, 17°.5----	Popoff. A. C. P. 161, 285.
" " "-----	"-----	.833, 21°.8----	Oechsner de Co- ninck. C. R. 82, 93.
Methyl butyl ketone. " " " B. 128°	$C H_3 \cdot C O \cdot C_4 H_9$ ----	.8298, 0°-----	Wanklyn and Erlen- meyer. J. 16, 522.
" " "-----	"-----	.7846, 50°-----	
" " "-----	"-----	.833, 0°-----	Friedel. J. 11, 295.
Methyl isobutyl ketone. B. 114°.	"-----	.81892, 0°-----	Frankland and Duppa. J. 20, 395.
Methyl secondary butyl ketone. B. 118°.	"-----	.811, 0°-----	G. Wagner. Ber. 18, ref. 180.
" " "-----	"-----	.8181, 14°.5----	Wislicenus. A. C. P. 219, 308.
Methyl tertiary butyl ke- tone, or pinacolin. B. 106°.	$C H_3 \cdot C O \cdot C (C H_3)_3$ ----	.7999, 16°-----	Fittig. J. 12, 347.
" " " "-----	"-----	.830, 0°-----	Two preparations. Butlerow. A. C. P. 174, 127.
" " " "-----	"-----	.791, 50°-----	
" " " "-----	"-----	.823, 0°-----	
" " " "-----	"-----	.787, 50°-----	
" " " "-----	"-----	.7217, 105°-----	
Ketone from hexylene. B. 125°.	$C_6 H_{12} O$ -----	.8343, 11°-----	Schiff. Bei. 9, 559. L. Henry. C. R. 97, 260.
Dipropyl ketone, or bu- tyrone. B. 144°.	$C_3 H_7 \cdot C O \cdot C_3 H_7$ ----	.830-----	Chancel. Ann. (3), 12, 146.
" " "-----	"-----	.819, 20°-----	E. Schmidt. Ber. 5, 597.
" " "-----	"-----	.82, 20°-----	Kurtz. A. C. P. 161, 207.
" " "-----	"-----	.83048, 4°-----	Perkin. J. C. S. 49, 323.
" " "-----	"-----	.82165, 15°-----	
" " "-----	"-----	.81452, 25°-----	
Diisopropyl ketone. B. 125°.	"-----	.8254, 17°-----	Münch. A. C. P. 180, 331.
Methyl amyl ketone. B. 155°—156°.	$C H_3 \cdot C O \cdot C_5 H_{11}$ ----	.813, 20°-----	E. Schmidt. Ber. 5, 597.
" " "-----	" ?-----	.898, 12°-----	Geuther. J. P. C. (2), 6, 160.
B. 182°.5	"-----	.828 }-----	Popoff. J. 18, 314.
Methyl isoamyl ketone. " " " B. 144	"-----	.829 }-----	
" " "-----	"-----	.8747, 17°-----	Grimshaw. A. C. P. 166, 163.
" " "-----	"-----	.8175, 17°.2----	Rohn. A. C. P. 190,

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methylisopropyl acetone	$\text{C H}_3. \text{C O. C}_5 \text{H}_{11}$ ----	.815, 20° ----	Romburgh. J. C. S. 52, 232.
Methyldiethylcarbyl ketone, or diethyl acetone. B. 138°.	" ----	.8171, 22° ----	Frankland and Duppa. J. 18, 306.
Methyl amyl pinacolin.	" ----	.842, 0° ----	Wischnegradsky. A. C. P. 178, 103.
" " B. 132°	" ----	.825, 21° ----	
Ethyl butyl pinacolin.	$\text{C}_2 \text{H}_5. \text{C O. C}(\text{CH}_3)_3$ ----	.831, 0° ----	" "
" " " B. 126°	" ----	.810, 21° ----	
Methyl hexyl ketone.	$\text{C H}_3. \text{C O. C}_6 \text{H}_{13}$ ----	.817, 23° ----	Städeler. J. 10, 361.
" " B. 171°	" ----	.8185, 20° ----	Brühl. A. C. P. 203, 1.
" " " ----	" ----	.6843 } 172°.3	{ Schiff. G. C. 1. 13, 177.
" " " ----	" ----	.6844 }	
" " B. 209°	" ----	.8430, 15° ----	Poetsch. A.C.P. 218, 56.
" " " ----	" ----	.8351, 0° ----	Béhal. B. S. C. 47, 34.
Methyl butyrone. B. 180°	$\text{C}_8 \text{H}_{16} \text{O}$ ----	.827, 16° ----	Limpricht. J. 11, 296.
Isopropyl isobutyl ketone. B. 160°.	$\text{C}_3 \text{H}_7. \text{C O. C}_4 \text{H}_9$ ----	.865, 14° ----	Williams. C. N. 39, 41.
Ethyl amyl pinacolin.	$\text{C}_2 \text{H}_5. \text{C O. C}_5 \text{H}_{11}$ ----	.845, 0° ----	Wischnegradsky. A. C. P. 178, 103.
" " " B. 151°	" ----	.829, 21° ----	
Diisobutyl ketone, or valerone. B. 181°.	$\text{C}_4 \text{H}_9. \text{C O. C}_4 \text{H}_9$ ----	.833, 20° ----	E. Schmidt. Ber. 5, 597.
Methyl octyl ketone.	$\text{C H}_3. \text{C O. C}_8 \text{H}_{17}$ ----	.8294, 17°.7	Jourdan. Ber. 13, 434.
" " " ----	" ----	.8379, 3°.5	Krafft. Ber. 15, 1687.
" " " ----	" ----	.8247, 20°	
Diamyl ketone, or caprone. B. 220°.	$\text{C}_5 \text{H}_{11}. \text{C O. C}_5 \text{H}_{11}$ ----	.822, 20° ----	E. Schmidt. Ber. 5, 597.
" " " ----	" ----	.828, 20° ----	Limpricht. J. 11, 296.
Methyl nonyl ketone, or methyl caprinol. B. 224°.	{ $\text{C H}_3. \text{C O. C}_9 \text{H}_{19}$ ----	.8295, 17°.5	{ Gorup-Besanez and Grimm. Z. C. 13, 290.
" " " ----		.8281, 18°.7	
" " " ----	" ----	.8268, 20°.5	Giesecke. Z. C. 13, 428.
Dihexyl ketone, or oenanthone. B. 264°.	$\text{C}_6 \text{H}_{13}. \text{C O. C}_6 \text{H}_{13}$ ----	.825, 30° ----	v. Uslar and Seekamp. J. 11, 299.
" " ?----	" ----	.8870, 15° ----	Poetsch. A. C. P. 218, 56.
Methyl diheptylcarbyl ketone. B. 302°.	$\text{C H}_3. \text{C O. C}_{15} \text{H}_{31}$ ----	.826, 17° ----	Jourdan. Ber. 13, 434.
Laurone. M. 69°	$\text{C}_{11} \text{H}_{23}. \text{C O. C}_{11} \text{H}_{23}$ ----	.8036, 69°	Krafft. Ber. 15, 1711.
" ----	" ----	.8024, 70°.7	
" ----	" ----	.7888, 90°.9	
Myristone. M. 76°.3	$\text{C}_{13} \text{H}_{27}. \text{C O. C}_{13} \text{H}_{27}$ ----	.8013, 76°.3	" "
" ----	" ----	.7986, 80°.8	
" ----	" ----	.7922, 90°.9	
Palmitone. M. 82°.8	$\text{C}_{15} \text{H}_{31}. \text{C O. C}_{15} \text{H}_{31}$ ----	.7997, 82°.8	" "
" ----	" ----	.7947, 90°.9	
Stearone. M. 88°.4	$\text{C}_{17} \text{H}_{35}. \text{C O. C}_{17} \text{H}_{35}$ ----	.7979, 88°.4	" "
" ----	" ----	.7932, 95°	

8th. Oxides, Alcohols, and Ethers of the Olefines.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethylene oxide-----	$C_2 H_4. O$ -----	.8945, 0° -----	Wurtz. J. 16, 486.
Propylene oxide-----	$C_3 H_6. O$ -----	.859, 0° -----	Oser. J. 13, 448.
Butylene oxide. B. 56°.5.	$C_4 H_8. O$ -----	.8344, 0° -----	Eltekow. J. C. S. 44, 566.
Isobutylene oxide. B. 51°.5.	" -----	.8311, 0° -----	Eltekow. Ber. 16, 397.
Amylene oxide. B. 95° --	$C_5 H_{10}. O$ -----	.824, 0° -----	Bauer. J. 13, 451.
Trimethylethylene oxide. B. 75°.5.	" -----	.8293, 0° -----	Eltekow. Ber. 16, 397.
Methylpropylethyleneox- ide. B. 110°.	$C_6 H_{12}. O$ -----	.8236, 13°.8---	L. Henry. Ann. (5), 29, 553.
δ. Hexylene oxide. B. 103°—104°.	" -----	.8739, 0° -----	Lipp. Ber. 18, 3284.
Octylene oxide. B. 145°--	$C_8 H_{16}. O$ -----	.831, 15° -----	De Clermont. Z. C. 13, 411.
Diamylene oxide. B. 185°.	$C_{10} H_{20}. O$ -----	.9402, 0° -----	Schneider. A. C. P. 157, 221.
Diethylene dioxide. B. 102°.	$C_4 H_8 O_2$ -----	1.0482, 0° ----	Wurtz. J. 15, 423.
Ethylene ethylidene di- oxide. B. 82°.5.	" -----	1.0002, 0° ----	Wurtz. J. 14, 656.
Ethylene glycol. B. 197°--	$C_2 H_4. (O H)_2$ -----	1.125, 0° -----	Wurtz. Ann. (3), 55, 410.
" " -----	" -----	.9444, 195° ---	Ramsay. J. C. S. 35, 463.
" " -----	" -----	1.11678, 15° } -----	Perkin. J. P. C. (2), 32, 523.
" " -----	" -----	1.11208, 25° } -----	
" " -----	" -----	1.1072, 20° -----	
Trimethylene glycol. B. 216°.	$C_3 H_6. (O H)_2$ -----	1.053, 19° -----	Brühl. Bei. 4, 782.
" " -----	" -----	1.0536, 18° ---	Reboul. C. R. 79, 169.
" " -----	" -----	1.0625, 0° -- } -----	Freund. J. C. S. 42, 156.
" " -----	" -----	.9028, 214° } -----	
Propylene glycol. B. 188°	" -----	1.051, 0° } -----	Zander. A. C. P. 214, 181.
" " -----	" -----	1.038, 23° } -----	
" " -----	" -----	1.054, 0° -----	Wurtz. J. 10, 464.
" " -----	" -----	1.047, 19° -----	Belohoubek. Ber. 12, 1873.
" " -----	" -----	1.0527, 0° -- } -----	Loebisch and Looss. J. C. S. 42, 377.
" " -----	" -----	.8899, 188°.5 } -----	
Butylene glycol. B. 183°.5	$C_4 H_8. (O H)_2$ -----	1.048, 0° -----	Zander. A. C. P. 214, 181.
Dimethylethyleneglycol. B. 207°.5.	" -----	1.0259, 0° -----	Wurtz. J. 12, 499.
Ethylethylene glycol.	" -----	1.0189, 0° -- } -----	Wurtz. C. R. 97, 473.
" " B. 191°.5	" -----	1.0059, 17°.5 } -----	
Isobutylene glycol. B. 177°	" -----	1.0129, 0° -- } -----	{ Grabowsky and Saytzeff. A. C. P. 179, 333.
" " -----	" -----	1.0003, 20° } -----	
			Nevolé. C. R. 83, 67.

NAME.	FORMULA.	SP. GRAVITY	AUTHORITY.
Amylene glycol. B. 177°	$C_5 H_{10} (O H)_2$	.987, 0°	Wurtz. J. 11, 424.
Ethylmethylethylene glycol. B. 187°.5.	"	.9945, 0°	{ Wagner and Saytzeff. A. C. P. 179, 309.
	"	.9800, 19°	
Isopropylethylene glycol. B. 206°.	"	.9987, 0°	Flavitsky. A. C. P. 179, 353.
	"	.9843, 21°.5	
Methylpropylethylene glycol. B. 207°.	$C_6 H_{12} (O H)_2$	.9669, 0°	Wurtz. J. 17, 516.
Dimethylbutyleneglycol.	"	.9759, 0°	Sorokin. B. S. C. 31, 72.
" " B. 220°	"	.9604, 24°	
Pseudohexylene glycol.	"	.9638, 0°	Wurtz. J. 17, 513.
" " "	"	.9202, 65°	
δ. Hexylene glycol.	"	.9809, 0°	Lipp. Ber. 18, 3283.
Pinakone. B. 177°	"	.96, 15°	Linnemann. J. 18, 315.
"	"	.96718, 15°	Perkin. J. P. C. (2), 32, 523.
"	"	.96087, 25°	
Octylene glycol.	$C_8 H_{16} (O H)_2$	.932, 0°	De Clermont. J. 17, 517.
" " B. 235°-240°	"	.920, 29°	
Butyrone pinakone	$C_{14} H_{28} (O H)_2$	.87, 20°	Kurtz. A. C. P. 161, 205.
Diethylene alcohol.	$C_4 H_{10} O_3$	1.132, 0°	Wurtz. J. 16, 489.
Triethylene alcohol	$C_6 H_{14} O_4$	1.138	" "
Methylenedimethylether, or methylal.	$C H_2 (O C H_3)_2$	.8551	Malaguti. Ann. (2), 70, 394.
" " "	"	.8604, 20°	Brühl. A. C. P. 203, 1.
" " "	"	.854, 20°	Arnhold. A. C. P. 240, 192.
Methylene diethyl ether.	$C H_2 (O C_2 H_5)_2$	.851, 0°	Greene. J. Am. C. S. 1, 523.
" " "	"	.8275, 16°.5	L. Henry. C. R. 101, 599.
" " "	"	.834, 20°	Arnhold. A. C. P. 240, 192.
Methylene dipropyl ether.	$C H_2 (O C_3 H_7)_2$	.8345, 20°	" "
Methylene diisopropyl ether.	"	.831, 20°	" "
Methylene diisobutyl ether.	$C H_2 (O C_4 H_9)_2$	.825, 20°	" "
Methylenediisoamylether	$C H_2 (O C_5 H_{11})_2$	.835, 20°	" "
Methylene dicetyl ether.	$C H_2 (O C_8 H_{17})_2$	.846, 20°	" "
Ethylene monethyl ether.	$C_2 H_4. O H. O C_2 H_5$	.926, 13°	Demole. Ber. 9, 746.
Ethylene diethyl ether.	$C_2 H_4. (O C_2 H_5)_2$	.7993, 0°	Wurtz. J. 11, 423.
Ethidene dimethyl ether, or dimethyl acetal.	$C_2 H_4. (O C H_3)_2$	.8555, 0°	Wurtz. J. 9, 597.
" " "	"	.8674, 1°	Alsberg. J. 17, 485.
" " "	"	.8787, 0°	
" " "	"	.8590, 14°	Dancer. J. 17, 484.
" " "	"	.8503, 22°	
" " "	"	.8497, 23°	
" " "	"	.8476, 25°	
" " "	"	.8554, 15°	Kraemer and Grodzki. Ber. 9, 1930.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethidene dimethyl ether, or dimethyl acetal.	$C_2 H_4 \cdot (O C H_3)_2$ ----	.8655, 22° ----	Bachmann. A. C. P. 218, 49.
“ “ “ --	“ ----	.8013, 62°.7----	Schiff. G. C. I. 13, 177.
“ “ “ --	“ ----	.85739, 15° }-----	Perkin. J. P. C. (2), 32, 523.
“ “ “ --	“ ----	.84764, 25° }-----	
Ethidenemethylethyleth- er, or methyl ethylacetal	$C_2 H_4 \cdot (OCH_3)(OC_2 H_5)$	.8535, 0° ----	Wurtz. J. 9, 597.
“ “ “ --	“ ----	.8433, 22° ----	Bachmann. A. C. P. 218, 49.
“ “ “ --	“ ----	.8655, 22° ----	Bachmann. A. C. P. 218, 53.
Ethidene diethyl ether, or acetal.	$C_2 H_4 \cdot (O C_2 H_5)_2$ ----	.842, 21° ----	Döbereiner.
“ “ “ --	“ ----	.823, 20° ----	Liebig. A. C. P. 5, 25.
“ “ “ --	“ ----	.821, 22°.4----	Stas. J. 1, 697.
“ “ “ --	“ ----	.8314, 20° ----	Brühl. A. C. P. 203, 1.
“ “ “ --	“ ----	.829, 13° ----	Engel and Girard. C. R. 90, 692.
“ “ “ --	“ ----	.7363 } 103°.2	{ Schiff. G. C. I. 13, 177.
“ “ “ --	“ ----	.7365 }-----	
“ “ “ --	“ ----	.826, 14° ----	Laatsch. A. C. P. 218, 26.
“ “ “ --	“ ----	.8210, 22° ----	Bachmann. A. C. P. 218, 49.
“ “ “ --	“ ----	.83187, 15° }-----	Perkin. J. P. C. (2), 32, 523.
“ “ “ --	“ ----	.82334, 25° }-----	
Ethidene dipropyl ether, or propylacetal. B. 147°	$C_2 H_4 \cdot (O C_3 H_7)_2$ ----	.825, 22°.5----	Girard. Ber. 13, 2232.
Ethidene diisobutyl ether, or isobutylacetal. B. 169°	$C_2 H_4 \cdot (O C_4 H_9)_2$ ----	.816, 22° ----	“ “
Ethidene diamyl ether, or diamyl acetal.	$C_2 H_4 \cdot (O C_5 H_{11})_2$ ----	.8347, 15° ---- .8012, 22° ----	Alsberg. J. 17, 485. Bachmann. A. C. P. 218, 49.
Propidene dipropyl ether.	$C_3 H_6 \cdot (O C_3 H_7)_2$ ----	.8495, 0° ----	Schudel. J. C. S. 46, 1283.
Butidene diethyl ether, or isobutyl acetal.	$C_4 H_8 \cdot (O C_2 H_5)_2$ ----	.9957, 12°.4----	Oeconomides. Ber. 14, 1201.
Dimethyl valeral -----	$C_5 H_{10} \cdot (O C H_3)_2$ ----	.852, 10° ----	Alsberg. J. 17, 486.
Diethyl valeral -----	$C_5 H_{10} \cdot (O C_2 H_5)_2$ ----	.835, 12° ----	“ “
Diamyl valeral -----	$C_5 H_{10} \cdot (O C_5 H_{11})_2$ ----	.849, 7° ----	Alsberg. J. 17, 485.
Ethidene oxymethylate --	$C_4 H_8 O \cdot (O C H_3)_2$ ----	.853, 12°.5----	Laatsch. A. C. P. 218, 13.
Ethidene oxyethylate ----	$C_4 H_8 O (O C_2 H_5)_2$ ----	.891, 14° ----	“ “
Ethidene oxypropylate ---	$C_4 H_8 O (O C_3 H_7)_2$ ----	.895, 14° ----	“ “
Ethidene oxyisobutylate -	$C_4 H_8 O (O C_4 H_9)_2$ ----	.879, 11° ----	“ “
Ethidene oxyisoamylate --	$C_4 H_8 O (O C_5 H_{11})_2$ ----	.874, 11° ----	“ “
Ethylene diacetate -----	$C_2 H_4 \cdot (C_2 H_3 O_2)_2$ ----	1.128, 0° ----	Wurtz. J. 12, 485.
“ “ -----	“ ----	1.1561, 20° ----	Brühl. Bei. 4, 782.
“ “ -----	“ ----	1.11076, 15° }-----	Perkin. J. P. C. (2), 32, 523.
“ “ -----	“ ----	1.10183, 25° }-----	
Ethylene dipropionate ---	$C_2 H_4 \cdot (C_3 H_5 O_2)_2$ ----	1.05440, 15° }-----	“ “
“ “ -----	“ ----	1.04566, 25° }-----	
Ethylene dibutyrate -----	$C_2 H_4 \cdot (C_4 H_7 O_2)_2$ ----	1.024, 0° ----	Wurtz. J. 12, 486.
Propylene diacetate -----	$C_3 H_6 \cdot (C_2 H_3 O_2)_2$ ----	1.109, 0° ----	Wurtz. J. 10, 464.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Propylene diacetate-----	$C_3 H_6. (C_2 H_3 O_2)_2$ ----	1.070, 19° ----	Reboul. C. R. 79, 169.
Propylene divalerate-----	$C_3 H_6. (C_5 H_9 O_2)_2$ ----	.98, 12° -----	Reboul. J. C. S. 36, 127.
β . Butylene monacetate --	$C_4 H_8. O H. (C_2 H_3 O_2)$	1.055, 0° -----	Wurtz. C. R. 97, 473.
Hexylene diacetate -----	$C_6 H_{12}. (C_2 H_3 O_2)_2$ ----	1.014, 0° -----	Wurtz. J. 17, 516.
Pseudohexylene diacetate	" "-----	1.009, 0° -----	Wurtz. J. 17, 513.
Ethidene diacetate-----	$C_2 H_4. (C_2 H_3 O_2)_2$ ----	1.060, 12° ----	Schiff. Ber. 9, 306.
" "-----	" "-----	1.073, 15° ----	Franchimont. J. C. S. 44, 452.
" "-----	" "-----	1.073, 15° ----	Rübencamp. A. C. P. 225, 267.
" "-----	" "-----	1.07, 10° -----	Geuther. J. 17, 329.
Ethidene acetate propionate. " "-----	$C_2 H_4. (C_2 H_3 O_2) \left\{ \begin{array}{l} (C_2 H_3 O_2) \\ (C_3 H_5 O_2) \end{array} \right\}$	$\left. \begin{array}{l} 1.046 \\ 1.042 \end{array} \right\} 15^\circ$ ----	$\left\{ \begin{array}{l} \text{Two preparations.} \\ \text{Rübencamp. A. C. P. 225, 267.} \end{array} \right\}$
Ethidene dipropionate ---	$C_2 H_4. (C_3 H_5 O_2)_2$ ----	1.020, 15° ----	Rübencamp. A. C. P. 225, 267.
Ethidene acetate butyrate	$C_2 H_4. (C_2 H_3 O_2) \left\{ \begin{array}{l} (C_2 H_3 O_2) \\ (C_4 H_7 O_2) \end{array} \right\}$	$\left. \begin{array}{l} 1.016, 15^\circ \\ 1.013, 15^\circ \end{array} \right\}$ ----	$\left\{ \begin{array}{l} \text{Two preparations.} \\ \text{Rübencamp. A. C. P. 225, 267.} \end{array} \right\}$
Ethidene dibutyrate -----	$C_2 H_4. (C_4 H_7 O_2)_2$ ----	.9855, 15° ----	Rübencamp. A. C. P. 225, 267.
Ethidene acetate valerate-	$C_2 H_4. (C_2 H_3 O_2) \left\{ \begin{array}{l} (C_2 H_3 O_2) \\ (C_5 H_9 O_2) \end{array} \right\}$	.991, 15° -----	" "
Ethidene divalerate-----	$C_2 H_4. (C_5 H_9 O_2)_2$ ----	.947, 15° -----	" "
Ethidene oxyformate-----	$C_6 H_{10} O_5$ -----	1.134, 21° ----	Geuther. A. C. P. 226, 223.
Ethidene oxyacetate -----	$C_8 H_{14} O_5$ -----	1.071, 16° ----	" "
Ethidene oxypropionate--	$C_{10} H_{18} O_5$ -----	1.027, 26° ----	" "
Ethidene oxybutyrate----	$C_{12} H_{22} O_5$ -----	.994, 20° ----	" "

9th. Ethers of Carbonic Acid.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl carbonate -----	$(C H_3)_2. C O_3$ -----	1.069, 22° ----	Counciler. Ber. 13, 1698.
" "-----	"-----	1.065, 17° ----	B. Röse. Ber. 13, 2418.
" "-----	"-----	1.060 -----	Schreiner. Ber. 13, 2080.
Methyl ethyl carbonate. B. 104°.	$C H_3. C_2 H_5. C O_3$ ----	1.0372 -----	" "
" " " B. 115°.	"-----	1.0016 -----	" "
Ethyl carbonate-----	$(C_2 H_5)_2. C O_3$ -----	.975, 19° ----	Ettling. A. C. P. 19, 17.
" "-----	"-----	.9998, 0° -- }	Kopp. A. C. P. 95, 307.
" "-----	"-----	.9780, 20° -- }	
" "-----	"-----	.9762, 20° ----	Brühl. A. C. P. 203, 1.
" "-----	"-----	.9735 -----	Schreiner. Ber. 13, 2080.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethyl propyl carbonate	$C_2 H_5. C_3 H_7. C O_3$	.9516, 20°	Pawlewski. Ber. 17, 1607.
Propyl carbonate	$(C_3 H_7)_2. C O_3$	.968, 22°	Cahours. C. R. 77, 746.
" "	"	.949, 17°	Röse. Ber. 13, 2418.
Butyl carbonate	$(C_4 H_9)_2. C O_3$	.9407, 0°	Lieben and Rossi. A. C. P. 165, 109.
" "	"	.9244, 20°	
" "	"	.9111, 40°	
Isobutyl carbonate	"	.919, 15°	
Isoamyl carbonate	$(C_5 H_{11})_2. C O_3$	.9144	Medlock. J. 2, 430.
" "	"	.9065, 15°.5	Bruce. J. 5, 605.
" "	"	.912, 15°	Röse. Ber. 13, 2418.
Ethyl orthocarbonate	$(C_2 H_5)_4. C O_4$	.925	Bassett. J. 17, 477.
Propyl orthocarbonate	$(C_3 H_7)_4. C O_4$	.911, 8°	Röse. Ber. 13, 2419.
Isobutyl orthocarbonate	$(C_4 H_9)_4. C O_4$	.900, 8°	" "

10th. Acids and Ethers of the Oxalic Series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Oxalic acid	$C_2 H_2 O_4$	2.00, 9°	Husemann. B. D. Z.
" "	$C_2 H_2 O_4. 2 H_2 O$	1.507	Richter.
" "	"	1.622	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.629	Buignet. J. 14, 15.
" "	"	1.63, 9°	Husemann. B. D. Z.
" "	"	1.680	Schröder. Ber. 10, 851.
" "	"	1.531	Rüdorff. Ber. 12, 251.
" "	"	1.57	W. C. Smith. Am. J. P. 53, 145.
" "	"	1.653, 18°.5	Wilson. F. W. C.
Succinic acid	$C_4 H_6 O_4$	1.55	Richter.
" "	"	1.529, 9°, sublimed.	Husemann. B. D. Z.
" "	"	1.552, 9°, cryst.	
" "	"	1.567	
Ethyl oxalic acid	"	1.2175, 20°	Schröder. Ber. 10, 851.
Pyrotartaric acid	$C_5 H_8 O_4$	1.408	Anschtz. Ber. 16, 2412.
" "	"	1.413	Schröder. Ber. 13, 1070.
Methylisopropylmalonic acid.	$C_7 H_{12} O_4$	.990, 15°	Romburgh. J. C. S. 52, 232.
Sebacic acid	$C_{10} H_{18} O_4$	1.1317, fused	Carlet. J. 6, 429.
Methyl oxalate	$C_4 H_6 O_4$	1.1566, 50°	Kopp. A. C. P. 95, 307.
" "	"	1.1479, 54°	Weger. A. C. P. 221, 61.
" "	"	1.0039, 163°.3	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl ethyl oxalate	$C_5 H_8 O_4$	1.27, 12°	Chancel. J. 3, 470.
" " "	"	1.15565, 0°	{ Wiens. Königs- berg Inaug. Diss. 1887.
" " "	"	.94693, 173°.7	
Ethyl oxalate	$C_6 H_{10} O_4$	1.0929, 7°.5	Dumas and Boullay. P. A. 12, 430.
" " "	"	1.086, 12°	Delffs. J. 7, 26.
" " "	"	1.1010, 5°—10°	{ Regnault. P. A. 62, 50.
" " "	"	1.0953, 10°—15°	
" " "	"	1.0898, 15°—20°	{ Kopp. A. C. P. 94, 257.
" " "	"	1.1016, 0°	
" " "	"	1.0815, 18°.2	{ Mendelejeff. J. 13, 7. Brühl. A. C. P. 203, 1.
" " "	"	1.0824, 15°	
" " "	"	1.0793, 20°	{ Weger. A. C. P. 221, 61.
" " "	"	1.1023	
" " "	"	1.1029	
" " "	"	1.1030	
" " "	"	1.08563, 15°	{ Perkin. J. P. C. (2), 32, 523.
" " "	"	1.07609, 25°	
Propyl oxalate	$C_8 H_{14} O_4$	1.018, 22°	Cahours. Les Mon- des, 32, 280.
" " "	"	1.0384, 0°	{ Wiens. Königs- berg Inaug. Diss. 1887.
" " "	"	.80601, 213°.5	
Butyl oxalate	$C_{10} H_{18} O_4$	1.002, 14°	Cahours. C. C. 5, 20.
" " "	"	1.0099, 0°	{ Wiens. Königs- berg Inaug. Diss. 1887.
" " "	"	.780, 243°.4	
Ethyl heptyl oxalate	$C_{11} H_{20} O_4$	.99542, 0°	{ " "
" " "	"	.75493, 263°.71	
Amyl oxalate	$C_{12} H_{22} O_4$	.968, 11°	Delffs. J. 7, 26.
Propyl heptyl oxalate	"	.981435, 0°	{ Wiens. Königs- berg Inaug. Diss. 1887.
" " "	"	.72669, 284°.4	
Propyl octyl oxalate	$C_{13} H_{24} O_4$	.97245, 0°	{ " "
" " "	"	.71512, 291°.1	
Methyl malonate	$C_5 H_8 O_4$	1.135, 22°	Osterland. J. C. S. (2), 13, 142.
" " "	"	1.16028, 15°	{ Perkin. J. P. C. (2), 32, 523.
" " "	"	1.15110, 25°	
" " "	"	1.1753, 0°	{ Wiens. Königs- berg Inaug. Diss. 1887.
" " "	"	.95686, 180°.7	
Ethyl malonate	$C_7 H_{12} O_4$	1.068, 18°	Conrad and Bischoff. A. C. P. 204, 127.
" " "	"	1.06104, 15°	{ Perkin. J. P. C. (2), 32, 523.
" " "	"	1.05248, 25°	
" " "	"	1.07607, 0°	{ Wiens. Königs- berg Inaug. Diss. 1887.
" " "	"	.86227, 198°.4	
Ethyl propyl malonate	$C_8 H_{14} O_4$	1.04977, 0°	{ " "
" " "	"	.83542, 211°	
Propyl malonate	$C_9 H_{16} O_4$	1.02705, 0°	{ " "
" " "	"	.79966, 228°.3	
Butyl malonate	$C_{11} H_{20} O_4$	1.0049, 0°	{ " "
" " "	"	.800073, 251°.5	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl succinate -----	$C_6 H_{10} O_4$ -----	1.1179, 20° ----	Fehling. A. C. P. 49, 195.
“ “ -----	“ -----	1.1162, 18° ----	} Weger. A. C. P. 221, 61.
“ “ -----	“ -----	.91200, 195°.2	
“ “ -----	“ -----	1.12611, 15° } ----	} Perkin. J. P. C. (2), 32, 523.
“ “ -----	“ -----	1.11718, 25° } ----	
Methyl ethyl succinate ----	$C_7 H_{12} O_4$ -----	1.0925, 0° ----	} Weger. A. C. P. 221, 61.
“ “ “ -----	“ -----	.86482, 208°.2	
Ethyl succinate -----	$C_8 H_{14} O_4$ -----	1.036 -----	D'Arcet. Ann. (2), 58, 291.
“ “ -----	“ -----	1.0718, 0° ----	} Kopp. A. C. P. 95, 307.
“ “ -----	“ -----	1.0475, 25°.5 } ----	
“ “ -----	“ -----	1.0592 } 0° ----	} Weger. A. C. P. 221, 61.
“ “ -----	“ -----	1.0600 } ----	
“ “ -----	“ -----	.82726, 215°.4 } ----	} Perkin. J. P. C. (2), 32, 523.
“ “ -----	“ -----	1.04645, 15° } ----	
“ “ -----	“ -----	1.03832, 25° } ----	} Wiens. Königs-berg Inaug. Diss. 1887.
Ethyl propyl succinate ----	$C_9 H_{16} O_4$ -----	1.03866, 0° ----	
“ “ “ -----	“ -----	.81476, 231°.1 } ----	} “ “
Propyl succinate -----	$C_{10} H_{18} O_4$ -----	1.0189, 0° ----	
“ “ -----	“ -----	.78183, 247°.1 } ----	} Silva. C. R. 69, 416.
Isopropyl succinate -----	“ -----	1.009, 0° ----	
“ “ -----	“ -----	.997, 18°.5 } ----	} Wiens. Königs-berg Inaug. Diss. 1887.
Ethyl butyl succinate ----	“ -----	1.02178, 0° ----	
“ “ “ -----	“ -----	.78572, 247° } ----	} “ “
Propyl butyl succinate ----	$C_{11} H_{20} O_4$ -----	1.0106, 0° ----	
“ “ “ -----	“ -----	.77587, 258°.7 } ----	} Perkin. J. P. C. (2), 32, 523.
Isobutyl succinate -----	$C_{12} H_{22} O_4$ -----	.97374, 15° } ----	
“ “ -----	“ -----	.96670, 25° } ----	} Wiens. Königs-berg Inaug. Diss. 1887.
Ethyl heptyl succinate ----	$C_{13} H_{24} O_4$ -----	.98503, 0° ----	
“ “ “ -----	“ -----	.73134, 291°.4 } ----	} Guareschi and Del Zanna. Ber. 12, 1699.
Isoamyl succinate -----	$C_{14} H_{26} O_4$ -----	.9612, 13° ----	
Heptyl succinate -----	$C_{15} H_{30} O_4$ -----	.951846, 0° ----	} Wiens. Königs-berg Inaug. Diss. 1887.
“ “ -----	“ -----	.68174, 350°.1 } ----	
Ethyl methylmalonate ----	$C_8 H_{14} O_4$ -----	1.021, 22° ----	Conrad and Bischoff. A. C. P. 204, 202.
“ “ -----	“ -----	1.02132, 15° } ----	} Perkin. J. P. C. (2), 32, 523.
“ “ -----	“ -----	1.01295, 25° } ----	
Methyl dimethylsuccinate	“ -----	1.0568, 16° ----	Barnstein. A. C. P. 242, 126.
Methyl ethylsuccinate ----	“ -----	1.051, 34° ----	Polko. A. C. P. 242, 113.
Ethyl pyrotartrate -----	$C_9 H_{16} O_4$ -----	1.025, 21° ----	Reboul. Ber. 9, 1129.
“ “ -----	“ -----	1.01885, 15° } ----	} Perkin. J. P. C. (2), 32, 523.
“ “ -----	“ -----	1.01126, 25° } ----	
Ethyl ethylmalonate ----	“ -----	1.008, 18° ----	Conrad and Bischoff. A. C. P. 204, 135.
“ “ -----	“ -----	1.01235, 15° } ----	} Perkin. J. P. C. (2), 32, 523.
“ “ -----	“ -----	1.00441, 25° } ----	
Ethyl dimethylmalonate	“ -----	.9965, 15° ----	Thorne. Ber. 14, 1644.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethyl dimethylmalonate	$C_9 H_{16} O_4$	1.00153, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	.99356, 25°	
Ethyl adipate	$C_{10} H_{18} O_4$	1.001, 20°.5	Malaguti. A. C. P. 56, 306.
Ethyl methylethylmalonate.	"	.994, 15°	Conrad and Bischoff. Ber. 13, 595.
Ethyl propylmalonate	"	.99309, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	.98541, 25°	
Ethyl isopropylmalonate	"	.997, 20°	Conrad and Bischoff. Ber. 13, 595.
" "	"	.99271, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	.98521, 25°	
Ethyl dimethylsuccinate	"	.9976, 17°	Levy and Engländer. A. C. P. 242, 201.
" "	"	1.0134, 17°	Barnstein. A. C. P. 242, 126.
Ethyl ethylsuccinate	"	1.030, 21°	Polko. A. C. P. 242, 113.
Ethyl diethylmalonate	$C_{11} H_{20} O_4$	.990, 16°	Conrad and Bischoff. A. C. P. 204, 139.
" "	"	1.0041, 0°	Shukowski. Ber. 21, ref. 57.
" "	"	.9901, 15°	
" "	"	.99167, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	.98441, 25°	
Ethyl isobutylmalonate	"	.983, 15°	Conrad and Bischoff. Ber. 13, 595.
Ethyl secondary-butylmalonate.	"	.988, 15°	Romburgh. Ber. 20, ref. 376.
Ethyl methylisopropylmalonate.	"	.990, 15°	Romburgh. Ber. 20, ref. 469.
Methyl suberate	$C_{10} H_{18} O_4$	1.014, 18°	Laurent. Ann. (2), 66, 162.
Ethyl suberate	$C_{12} H_{22} O_4$	1.003, 18°	Laurent. Ann. (2), 166, 160.
" "	"	.991, 15°	Hell. B. S. C. 19, 365.
" "	"	.98519, 15°	
" "	"	.97826, 25°	Perkin. J. P. C. (2), 32, 523.
Ethyl tetramethylsuccinate.	"	1.012, 0°	
" "	"	1.0015, 13°.5	Hell and Wittekind. Ber. 7, 319.
Methyl sebate	"	.985, 60°, 1.	
Ethyl sebate	$C_{14} H_{26} O_4$	.965, 16°	Neison. J. C. S. (3), 1, 318.
" "	"	.96824, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	.96049, 25°	
Butyl sebate	$C_{18} H_{34} O_4$	.9417, 0°	Gehring. C. R. 104, 1289.
" "	"	.9329, 15°	
Amyl sebate	$C_{20} H_{38} O_4$	.951, 18°	Neison. C. N. 32, 298.
Ethyl dioctylmalonate	$C_{23} H_{44} O_4$	.896, 18°	Conrad and Bischoff. Ber. 13, 595.
Ethyl acetomalonate	$C_9 H_{14} O_5$	1.080, 23°	Ehrlich. B. S. C. 23, 73.
Ethyl acetosuccinate	$C_{10} H_{16} O_5$	1.079, 21°	Conrad. B. S. C. 23, 73.
" "	"	1.08809, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.08049, 25°	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethyl acetoglutarate-----	$C_{11} H_{18} O_5$ -----	1.0505, 14°.1--	Wislicenus and Lim- pach. A. C. P. 192, 130.
Ethyl β methylacetosuc- cinate.	"-----	1.061, 27° ----	Hardtmuth. A. C. P. 192, 142.
Ethyl α methylacetoglu- tarate.	$C_{12} H_{20} O_5$ -----	1.043, 20° ----	Wislicenus and Lim- pach. A. C. P. 192, 133.
Ethyl dimethylacetosuc- cinate.	"-----	1.057, 27° ----	Hardtmuth. A. C. P. 192, 142.
Ethyl β ethylacetosucci- nate.	"-----	1.064, 16° ----	Thorne. J. C. S. 39, 337.
Ethyl lactosuccinate-----	$C_{11} H_{18} O_6$ -----	1.119, 0° ----	Wurtz and Friedel. J. 14, 378.
Ethyl succinosuccinate---	$C_{12} H_{16} O_6$ -----	1.4057, 18° ---	Hermann. J. C. S. 42, 712.
Ethyl ethidenemalonate---	$C_9 H_{14} O_4$ -----	1.0435, 15° ---	Komnenos. A. C. P. 218, 158.

11th. Acids and Ethers of the Glycollic Series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Glycollic acid -----	$C_2 H_4 O_3$ -----	1.197, 13° ----	Cloëz. J. 5, 497.
Lactic acid-----	$C_3 H_6 O_3$ -----	1.215, 10° ----	Gay Lussac and Pe- louze. P. A. 29, 111.
" "-----	"-----	1.2485, 15° ---	Mendelejeff. J. 13, 7.
" "-----	"-----	1.2403, 20° ---	Brühl. Bei. 4, 782.
Methyl glycollic acid ---	"-----	1.180-----	Heintz. J. 12, 359.
Ethyl oxyisobutyric acid	$C_6 H_{12} O_3$ -----	1.0211, 0° -- }	Helland Waldbauer.
" "-----	"-----	1.0101, 16° }---	Ber. 10, 450.
Amyl glycollic acid-----	$C_7 H_{14} O_3$ -----	1.003-----	Siemens. J. 14, 451.
Methyl glycollate-----	$C_3 H_6 O_3$ -----	1.1862-----	Schreiner. Bei. 3, 350.
Ethyl glycollate-----	$C_4 H_8 O_3$ -----	1.1074-----	" "
" "-----	"-----	1.0333-----	Fahlberg. J. P. C. (2), 7, 340.
Propyl glycollate-----	$C_5 H_{10} O_3$ -----	1.0837-----	Schreiner. Bei. 3, 350.
Methyl methylglycollate	$C_4 H_8 O_3$ -----	1.0845-----	" "
Ethyl methylglycollate --	$C_5 H_{10} O_3$ -----	1.0746-----	" "
Propyl methylglycollate--	$C_6 H_{12} O_3$ -----	1.0592-----	" "
Methyl ethylglycollate---	$C_5 H_{10} O_3$ -----	1.0105-----	" "
Ethyl ethylglycollate ---	$C_6 H_{12} O_3$ -----	.978-----	Schreiber. Z. C. 13, 168.
" "-----	"-----	.9960-----	Schreiner. Bei. 3, 350.
Propyl ethylglycollate ---	$C_7 H_{14} O_3$ -----	.9896-----	" "

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl propylglycollate	$C_6 H_{12} O_3$	.9845	Schreiner. Bei. 3, 350.
Ethyl propylglycollate	$C_7 H_{14} O_3$	.9758	" "
Propyl propylglycollate	$C_8 H_{16} O_3$	.9678	" "
Methyl lactate	$C_4 H_8 O_3$	1.1176	" "
Ethyl lactate	$C_5 H_{10} O_3$	1.0542, 0°	Wurtz and Friedel. J. 14, 373.
" "	"	1.042, 13°	
" "	"	1.0540	Schreiner. Bei. 3, 350.
Ethyl methyllactate	$C_6 H_{12} O_3$	1.0030	" "
Ethyl ethyllactate	$C_7 H_{14} O_3$	.9203, 0°	Wurtz. J. 12, 294.
" "	"	.9540	Schreiner. Bei. 3, 350.
Ethyl oxyisobutyrate	$C_6 H_{12} O_3$	.9931, 13°	Frankland and Duppa. P.T. 1866, 309.
" "	"	1.0750	Schreiner. Bei. 3, 350.
Ethyl methyloxybutyrate	$C_7 H_{14} O_3$	.9768, 13°	Frankland and Duppa. J. 18, 381.
" "	"	1.0100	Schreiner. Bei. 3, 350.
Ethyl ethyloxybutyrate	$C_8 H_{16} O_3$	.930, 19°	Duvillier. Ann. (5), 17, 533.
" "	"	.9540	Schreiner. Bei. 3, 350.
Methyl diethyloxyacetate	$C_7 H_{14} O_3$	.9896, 16°.5	Frankland and Duppa. P.T. 1866, 309.
Ethyl diethyloxyacetate	$C_8 H_{16} O_3$	.9613, 18°.7	" "
" "	"	.98	L. Henry. B. S. C. 19, 212.
Amyl diethyloxyacetate	$C_{11} H_{22} O_3$	.93227, 13°	Frankland and Duppa. P.T. 1866, 309.
Ethyl amylhydroxalate	$C_9 H_{18} O_3$	.9449, 13°	Frankland and Duppa. J. 18, 382.
Ethyl ethylamylhydroxalate.	$C_{11} H_{22} O_3$	.9399, 13°	Frankland and Duppa. P.T. 1866, 309.
Ethyl diamyloxalate	$C_{14} H_{28} O_3$	.9137, 13°	Frankland and Duppa. J. 18, 383.
Ethyl acetoglycollate	$C_6 H_{10} O_4$	1.0093, 17°	Heintz. J. 15, 292.
Ethyl acetolactate	$C_7 H_{12} O_4$	1.0458, 17°	Wislicenus. J. 15, 300.
Ethyl propionoglycollate	"	1.0052, 22°	Senf. Ber. 14, 2416.
Ethyl butyroglycollate	$C_8 H_{14} O_4$	1.0288, 22°	" "
Ethyl isobutyroglycollate	"	1.0240, 22°.5	" "
Ethyl butyrolactate	$C_9 H_{16} O_4$	1.024, 0°	Wurtz. J. 12, 295.
" "	"	1.028, 0°	Wurtz. J. 13, 273.
Lactyl ethyl lactate	$C_8 H_{14} O_5$	1.134, 0°	Wurtz and Friedel. J. 14, 377.
Ethyl diethylglyoxylate	$C_8 H_{16} O_4$	.994, 18°	Schreiber. Z. C. 13, 168.
Oxybutyric lactone	$C_4 H_6 O_2$	1.1441, 0°	Saytzeff Ber. 14, 2688.
" "	"	1.1286, 16°	
" "	"	1.1302, 20°	Frühling. Ber. 15, 2622.
" "	"	1.1295, 10°	Henry. C. R. 101, 1158.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethylbutyric lactone-----	$C_6 H_{10} O_2$ -----	1.0348, 16° ---	Chanlaroff. A. C. P. 226, 339.
Heptolactone-----	$C_7 H_{12} O_2$ -----	.9818, 4° ---	Amthor. Ber. 14, 1718.
"-----	"-----	.992, 16° ---	Young. A. C. P. 216, 41.

12th. Acids and Ethers of the Pyruvic Series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Pyruvic, pyroracemic, or acetyl-formic acid.	$C_3 H_4 O_3$ -----	1.288, 18° ---	Völckel. J. 6, 426.
" "-----	"-----	1.2792-----	Berzelius.
" "-----	"-----	1.2403-----	Claisen and Shadwell. Ber. 11, 1567.
" "-----	"-----	1.2600-----	
" "-----	"-----	1.2415-----	Claisen and Shadwell. Ber. 11, 621.
Propionyl-formic acid----	$C_4 H_6 O_3$ -----	1.2000, 17°.5--	Claisen and Moritz. Ber. 13, 2122.
β . Acetyl-propionic, or laevulinic acid.	$C_5 H_8 O_3$ -----	1.135, 15° ---	Conrad. Ber. 11, 2178.
Methyl pyruvate -----	$C_4 H_6 O_3$ -----	1.154, 0° ---	Oppenheim. B. S. C. 19, 254.
Methyl acetacetate-----	$C_5 H_8 O_3$ -----	1.037, 9° ---	Brandes. J. 19, 306.
Ethyl acetacetate-----	$C_6 H_{10} O_3$ -----	1.03, 5° ---	Geuther. J. 18, 303.
" "-----	"-----	1.0256, 20° ---	Brühl. A. C. P. 203, 1.
" "-----	"-----	1.030, 15° ---	Elion. Ber. 17, ref. 568.
" "-----	"-----	1.0465, 0° ---	Schiff. Ber. 19, 560.
" "-----	"-----	.9880, 55°.8	
" "-----	"-----	.9644, 79°.2	
" "-----	"-----	.9029, 135°.5	
" "-----	"-----	.8458, 180°	
" "-----	"-----	1.03174, 15°	Perkin. J. P. C. (2), 32, 523.
" "-----	"-----	1.02353, 25°	
Isobutyl acetacetate-----	$C_8 H_{14} O_3$ -----	.979, 0° ---	{ Emmerling and Oppenheim. Ber. 9, 1097.
" "-----	"-----	.932, 23° ---	
Amyl acetacetate -----	$C_9 H_{16} O_3$ -----	.954, 10° ---	Conrad. A. C. P. 186, 231.
Methyl methylacetacetate	$C_6 H_{10} O_3$ -----	1.020, 9° ---	Brandes. J. 19, 306.
Ethyl methylacetacetate--	$C_7 H_{10} O_3$ -----	.995, 14° ---	" "
Methyl laevulinate -----	$C_6 H_{10} O_3$ -----	1.0684, 0° ---	{ Grote, Kehrler, and Tollens. A. C. P. 206, 221.
" "-----	"-----	1.0519, 20°	
Ethyl laevulinate-----	$C_7 H_{12} O_3$ -----	1.0325, 0° ---	" "
" "-----	"-----	1.0156, 20°	
Propyl laevulinate-----	$C_8 H_{14} O_3$ -----	1.0103, 0° ---	" "
" "-----	"-----	.9937, 20° ---	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl ethylacetacetate	$C_7 H_{12} O_3$	1.009, 6°	Geuther. J. 18, 303.
Ethyl ethylacetacetate	$C_8 H_{14} O_3$	.998, 12°	" "
" "	"	.981, 16°	James. A. C. P. 226, 202.
" "	"	.9834, 16°	Frankland and Duppa.
Propyl ethylacetacetate	$C_9 H_{16} O_3$	.981, 0°	Burton. A. C. J. 3, 385.
Amyl ethylacetacetate	$C_{11} H_{20} O_3$	.937, 26°	Conrad. A. C. P. 186, 232.
Ethyl dimethylacetacetate	$C_8 H_{14} O_3$	.9913, 16°	Frankland and Duppa. J. 18, 309.
Ethyl propionylpropionate	"	.9948, 0°	{ Hellon and Oppenheim. Ber. 10, 701 and 861.
" "	"	.9827, 15°	
" "	"	.9870, 15°	
Ethyl methylethylacetacetate.	$C_9 H_{16} O_3$	.974, 22°	Saur. A. C. P. 188, 275.
Ethyl isopropylacetacetate	"	.98046, 0°	Frankland and Duppa. J. 20, 395.
Ethyl methylpropylacetacetate.	$C_{10} H_{18} O_3$	.9575, 17°	Jones. A. C. P. 226, 288.
Ethyl isobutylacetacetate.	"	.951, 17°.5	Rohn. A. C. P. 190, 307.
Ethyl ethylpropionylpropionate.	"	.966, 15°	Israel. A. C. P. 231, 197.
Ethyl dipropylacetacetate	$C_{12} H_{22} O_3$	.9585, 0°	Burton. A. C. J. 3, 386.
Ethyl heptylacetacetate	$C_{13} H_{24} O_3$	.9324	Jourdan. Ber. 13, 434.
Ethyl octylacetacetate	$C_{14} H_{26} O_3$	.9354, 18°.5	Guthzeit. A. C. P. 204, 3.
Ethyl diisobutylacetacetate.	"	.947, 10°	Mixter. Ber. 7, 501.
Ethyl diheptylacetacetate	$C_{20} H_{38} O_3$	.8907, 17°.5	Jourdan. J. C. S. 38, 314.
Ethyl acetopyruvate	$C_7 H_{10} O_4$	1.124, 21°	Claisen and Stylos. Ber. 20, 2189.
Ethyl diacetylacetate	$C_8 H_{12} O_4$	1.044, 15°	Elion. Ber. 16, 1369.
" "	"	1.1, 15°	Elion. Ber. 16, 2762.
" "	"	1.064, 15°	James. A. C. P. 226, 202.
Ethyl carbacetacetate	$C_8 H_{10} O_3$	1.136, 27°	Duisberg. Ber. 15, 1387.
Ethyl ethylideneacetacetate.	$C_8 H_{12} O_3$	1.0225, 15°	Claisen and Matthews. A. C. P. 218, 173.
Ethyl amylideneacetacetate.	$C_{11} H_{18} O_3$	.9612, 15°	Matthews. Ber. 16, 1372.
Ethyl ethoxymethylacetacetate.	$C_9 H_{16} O_4$	.976, 22°	Isbert. A. C. P. 234, 195.
Ethyl ethoxyethylacetacetate.	$C_{10} H_{18} O_4$	.957, 22°	Isbert. A. C. P. 234, 194.

13th. Acids and Ethers of the Acrylic Series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methylacrylic acid-----	$C_4H_6O_2$ -----	1.0153, 20° ---	Brühl. Ber. 14, 2800.
β . Crotonic, or quartenylic acid.	"-----	1.018, 25° ---	Gauthier. J.P.C. (2), 3, 442.
Pyroterebic acid-----	$C_6H_{10}O_2$ -----	1.01 -----	Rabourdin. A. C. P. 52, 395.
" "-----	"-----	1.006, 26° ---	Mielek. A.C.P. 180, 52.
Methylethylacrylic acid--	"-----	.9812, 25° ---	Lieben and Zeisel. M. C. 4, 71.
Hydrosorbic acid-----	"-----	.969, 19° ---	Barringer and Fittig. Z. C. 13, 425.
Amyldecatonic acid-----	$C_{10}H_{18}O_2$ -----	.9096, 0° ---	Borodin. ?
Moringic acid-----	$C_{15}H_{28}O_2$ -----	.908, 12°.5---	Walter. C. R. 22, 1143.
Oleic acid-----	$C_{18}H_{34}O_2$ -----	.808, 19° ---	Chevreul.
Methyl acrylate. B. 80°.3.	$C_4H_6O_2$ -----	.977, 0° ---	Kahlbaum. Ber. 13, 2349.
" "-----	"-----	.961, 19°.2	
" "-----	"-----	.97388, 0° ---	
" "-----	"-----	.87194, 80°.3	Weger. A.C.P. 221, 61.
Liquid polymer of methyl acrylate. " "-----	$(C_4H_6O_2)_n$ -----	1.140, 0° ---	
" "-----	"-----	1.125, 18° ---	
Solid polymer of methyl acrylate. " "-----	"-----	1.2223, 15°.6	Kahlbaum. Ber. 13, 2349.
" "-----	"-----	1.2222, 18°.2	
" "-----	"-----	"-----	
Ethyl acrylate. B. 98°.5	$C_5H_8O_2$ -----	.9252, 0° ---	Caspary and Tollens. B. S. C. 20, 368.
" "-----	"-----	.9136, 15° ---	
" "-----	"-----	.93928, 0° ---	
" "-----	"-----	.81970, 98°.5	Weger. A. C. P. 221, 61.
Propyl acrylate. B. 122°.9	$C_6H_{10}O_2$ -----	.91996, 0° ---	
" "-----	"-----	.7847, 122°.9	
Methyl crotonate-----	$C_5H_8O_2$ -----	.9806, 4° ---	Kahlbaum. Ber. 12, 344.
Ethyl crotonate-----	$C_6H_{10}O_2$ -----	.9188	Brühl. A.C.P. 235, 1.
" "-----	"-----	.9199	
" "-----	"-----	.9237	
" "-----	"-----	.92680, 15°	Perkin. J. P. C. (2), 32, 523.
" "-----	"-----	.91846, 25°	
Ethyl β crotonate-----	"-----	.927, 19° ---	
Ethyl angelate-----	$C_7H_{12}O_2$ -----	.9347, 0° ---	Geuther. J. P. C. (2), 3, 444.
Ethyl tiglate-----	"-----	.926, 21° ---	Beilstein and Wiegand. Ber. 17, 2261.
" "-----	"-----	.9425, 0° ---	Geuther and Fröhlich. Z. C. 13, 549.
Ethyl ethylcrotonate-----	$C_8H_{14}O_2$ -----	.9203, 13° ---	Beilstein and Wiegand. Ber. 17, 2261.
Methyl oleate-----	$C_{19}H_{36}O_2$ -----	.879, 18° ---	Frankland and Duppa. J. 18, 384.
Ethyl oleate-----	$C_{20}H_{38}O_2$ -----	.871, 18° ---	Laurent. Ann. (2), 65, 294.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethyl oleate-----	$C_{20} H_{38} O_2$ -----	.87589	Perkin. J. P. C. (2), 32, 523.
" "-----	"-----	.87525	
" "-----	"-----	.87041	
" "-----	"-----	.86991	
Methyl elaidate-----	$C_{19} H_{36} O_2$ -----	.872, 18°-----	Laurent. Ann. (2), 65, 294.
Ethyl elaidate-----	$C_{20} H_{38} O_2$ -----	.869, 18°-----	" "

14th. Derivatives of the Acrylic Series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Acrolein, or acrylaldehyde	$C_3 H_4 O$ -----	.8410, 20°-----	Brühl. Bei. 4, 780.
Metacrolein-----	$(C_3 H_4 O)_n$ -----	1.03, 8°-----	Geuther. J. 17, 334.
Acropinacone-----	$C_6 H_{10} O_2$ -----	.99, 17°-----	Linnemann. J. 18, 317.
Acrolein ethylate-----	$C_5 H_{10} O_2$ -----	.936, 4°-----	Taubert. J. C. S. 31, 296.
Acrolein diacetate-----	$C_7 H_{10} O_4$ -----	1.076, 22°-----	Hübner and Geu- ther. J. 13, 307.
Crotonaldehyde-----	$C_4 H_6 O$ -----	1.033, 0°-----	Roscoe and Schor- lemmer's Treatise.
Diacetate from crotonalde- hyde.	$C_8 H_{12} O_4$ -----	1.05, 14°-----	Lagermark and El- tekoff. Ber. 12, 694.
Tiglic aldehyde, or guajol	$C_5 H_8 O$ -----	.871, 15°-----	Völckel. J. 7, 611.
β. Angelicalactone-----	$C_5 H_6 O_2$ -----	1.1084, 0°-----	Wolff. A. C. P. 229, 257.
Methylethylacrolein-----	$C_6 H_{10} O$ -----	.8577, 20°-----	Lieben and Zeisel. M. C. 4, 18.
Amyldecaldehyde-----	$C_{10} H_{18} O$ -----	.862, 0°-----	Borodin. Ber. 5, 480.
"-----	"-----	.848, 20°-----	
"-----	"-----	.861, 0°-----	Gäss and Hell. Ber. 8, 372.
"-----	"-----	.851, 14°-----	
Hexylpentylacrylic alde- hyde. "-----	$C_{14} H_{26} O$ -----	.8494, 15°-----	Perkin, Jr. Ber. 15, 2804.
"-----	"-----	.8416, 30°-----	
"-----	"-----	.8392, 35°-----	Perkin, Jr. J. C. S. 44, 81.
"-----	"-----	.8504, 15°-----	
Hexylpentylacrylic alco- hol. "-----	$C_{14} H_{28} O$ -----	.8520, 15°-----	Perkin, Jr. Ber. 15, 2810.
"-----	"-----	.8444, 30°-----	
"-----	"-----	.8418, 35°-----	
Hexylpentylacrylic ace- tate. "-----	$C_{16} H_{30} O_2$ -----	.8680, 15°-----	Perkin, Jr. Ber. 15, 2809.
"-----	"-----	.8597, 30°-----	
"-----	"-----	.8568, 35°-----	

15th. Acids and Ethers, Malic-Tartaric Group.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Malic acid -----	$C_4 H_6 O_5$ -----	1.559, 4° -----	Schröder. Ber. 12, 1611.
Tartaric acid -----	$C_4 H_6 O_6$ -----	1.75 -----	Richter.
" " -----	" -----	1.764 -----	Schiff. J. 12, 41.
" " -----	" -----	1.739 -----	Buignet. J. 14, 15.
" " -----	" -----	1.754 -----	Schröder. Ber. 10, 851.
" " -----	" -----	1.77 -----	W. C. Smith. Am. J. P. 53, 145.
" " -----	" -----	1.7617 -----	{ Wiedemann and Lüdeking. P. A. (2), 25, 151.
" " Amorphous -----	" -----	1.6321 -----	
" " -----	" -----	1.7594, 7° -----	Perkin. J. C. S. 51, 366.
Racemic acid -----	$C_4 H_6 O_6$ -----	1.7782, 7° -----	" "
" " -----	$C_4 H_6 O_6 \cdot H_2 O$ -----	1.75 -----	Pasteur. J. 2, 309.
" " -----	" -----	1.69 -----	Buignet. J. 14, 15.
" " -----	" -----	1.6873, 7° -----	Perkin. J. C. S. 51, 366.
Laevotartaric acid -----	" -----	1.7496 -----	Pasteur. Ann. (3), 28, 72.
Methyl maleate -----	$C_6 H_8 O_4$ -----	1.1529, 14° -----	Anschütz. Ber. 12, 2283.
" " -----	" -----	1.16029, 11°.8 -----	{ Knops. V. H. V. 1887, 17.
" " -----	" -----	1.15532, 16°.6 -----	
" " -----	" -----	1.15172, 20° -----	
" " -----	" -----	1.15060, 21° -----	
" " -----	" -----	1.14562, 26° -----	
" " -----	" -----	1.14211, 29°.4 -----	
" " -----	" -----	1.13827, 33° -----	
Ethyl maleate -----	$C_8 H_{12} O_4$ -----	1.06917, 20° -----	" "
Propyl maleate -----	$C_{10} H_{16} O_4$ -----	1.02899, 20° -----	" "
Ethyl fumarate -----	$C_8 H_{12} O_4$ -----	1.106, 11° -----	Henry. A. C. P. 156, 178.
" " -----	" -----	1.0522, 17°.5 -----	Anschütz. Ber. 12, 2282.
" " -----	" -----	1.05199, 20° -----	Knops. V. H. V. 1887, 17.
Propyl fumarate -----	$C_{10} H_{16} O_4$ -----	1.02732, 14°.3 -----	{ " "
" " -----	" -----	1.02447, 17°.4 -----	
" " -----	" -----	1.02203, 20° -----	
" " -----	" -----	1.02127, 20°.8 -----	
" " -----	" -----	1.01691, 25°.5 -----	
" " -----	" -----	1.01352, 29°.1 -----	
" " -----	" -----	1.00978, 33° -----	
Methyl tartrate -----	$C_6 H_{10} O_6$ -----	1.3403, 15° -----	Anschütz and Pic- tet. Ber. 13, 1177.
Ethyl tartrate -----	$C_8 H_{14} O_6$ -----	1.1989 -----	Landolt. Ber. 9, 910.
" " -----	" -----	1.2097, 14° -----	Anschütz and Pic- tet. Ber. 13, 1177.
" " -----	" -----	1.2097, 15° -----	{ Perkin. J. C. S. 51, 363.
" " -----	" -----	1.2019, 25° -----	

NAME.	FORMULA.	SP. GRAVITY	AUTHORITY.
Ethyl racemate-----	$C_8 H_{14} O_6$ -----	1.2098, 15°	Perkin. J. C. S. 51, 363.
" "-----	"-----	1.2019, 25°	
Propyl tartrate-----	$C_{10} H_{18} O_6$ -----	1.1392, 17°	Anschütz and Pictet. Ber. 13, 1177. Pictet. Ber. 15, 2242.
Isopropyl tartrate-----	$C_{10} H_{18} O_6$ -----	1.1300, 20°	

16th. Acids and Ethers, Citric Acid Group.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Citric acid-----	$C_6 H_8 O_7$ -----	1.617-----	Richter.
" "-----	"-----	1.542-----	Schiff. J. 12, 41.
" "-----	"-----	1.553-----	Buignet. J. 14, 15.
" "-----	"-----	1.557-----	W. C. Smith. Am. J. P. 53, 145.
Itaconic acid-----	$C_5 H_6 O_4$ -----	1.573-----	Schröder. Ber. 13, 1070.
" "-----	"-----	1.632-----	
Citraconic acid-----	"-----	1.616-----	" "
" "-----	"-----	1.618-----	
Citraconic anhydride-----	$C_5 H_4 O_3$ -----	1.247-----	Watts' Dictionary.
" "-----	"-----	1.25360, 12°.4	
" "-----	"-----	1.24894, 16°.6	Knops. V. H. V. 1887, 17.
" "-----	"-----	1.24518, 20°	
" "-----	"-----	1.24405, 21°	
" "-----	"-----	1.23920, 25°.4	
" "-----	"-----	1.23501, 29°.2	
" "-----	"-----	1.23073, 33°	
Triethyl citrate-----	$C_{12} H_{20} O_7$ -----	1.142, 21°	Malaguti. A. C. P. 21, 267.
" "-----	"-----	1.1369, 20°	Conen. Ber. 12, 1653.
Tetrethyl citrate-----	$C_{14} H_{24} O_7$ -----	1.1022, 20°	" "
Ethyl aconitate-----	$C_{12} H_{18} O_6$ -----	1.074, 14°	Watts' Dictionary.
" "-----	"-----	1.1064-----	Conen. Ber. 12, 1653.
Ethyl isaconitate-----	"-----	1.0505, 15°	Conrad and Guthzeit. A. C. P. 222, 255.
Methyl itaconate-----	$C_7 H_{10} O_4$ -----	1.1399, 14°.7	Anschütz. Ber. 14, 2787.
" "-----	"-----	1.13195, 12°	Knops. V. H. V. 1887, 17.
" "-----	"-----	1.12410, 18°	
" "-----	"-----	1.12182, 20°	
" "-----	"-----	1.11882, 22°.5	
" "-----	"-----	1.11421, 27°.1	
" "-----	"-----	1.10847, 32°.4	
Polymer of methyl itaconate.	$(C_7 H_{10} O_4)_n$ -----	1.3126, 20°	" "
Ethyl itaconate-----	$C_9 H_{14} O_4$ -----	1.051, 15°	Anschütz. Ber. 14, 2787.
" "-----	"-----	1.04613, 20°	Knops. V. H. V. 1887, 17.
Polymer of ethyl itaconate	$(C_9 H_{14} O_4)_n$ -----	1.2549, 20°	" "

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl citraconate -----	$C_7 H_{10} O_4$ -----	1.1168, 15° } -----	Perkin. Ber. 14,
" " -----	" -----	1.1050, 30° } -----	2541.
" " -----	" -----	1.1172, 13°.8 -----	O. Strecker. Ber. 14,
" " -----	" -----	1.1164, 15°.5 -----	2785.
" " -----	" -----	1.11043, 20° -----	Gladstone. Bei. 9,
Ethyl citraconate -----	$C_9 H_{14} O_4$ -----	1.1050, 15° } -----	249.
" " -----	" -----	1.038, 30° -----	Knops. V. H. V.
" " -----	" -----	1.040, 18°.5 -----	1887, 17.
" " -----	" -----	1.047, 15° -----	Perkin. Ber. 14,
" " -----	" -----	1.048, 16°.5 -----	2543.
" " -----	" -----	1.06241, 20° -----	Watts' Dictionary.
Methyl mesaconate -----	$C_7 H_{10} O_4$ -----	1.1254, 15° } -----	Petri. Ber. 14, 2785.
" " -----	" -----	1.1138, 30° } -----	Gladstone. Bei. 9,
" " -----	" -----	1.1293, 11°.8 -----	249.
" " -----	" -----	1.1246, 16° -----	Knops. V. H. V.
" " -----	" -----	1.12966, 11°.9 } -----	1887, 17.
" " -----	" -----	1.12462, 16°.4 } -----	Perkin. Ber. 14,
" " -----	" -----	1.12097, 20° -----	2543.
" " -----	" -----	1.12011, 20°.8 } -----	O. Strecker. Ber. 14,
" " -----	" -----	1.11648, 24°.3 } -----	2785.
" " -----	" -----	1.11180, 28°.6 } -----	Gladstone. Bei. 9,
" " -----	" -----	1.10702, 33° -----	249.
Ethyl mesaconate -----	$C_9 H_{14} O_4$ -----	1.043, 20° -----	Knops. V. H. V.
" " -----	" -----	1.051, 15° -----	1887, 17.
" " -----	" -----	1.039, 30° -----	Pebal. J. 404.
" " -----	" -----	1.043, 20° -----	Perkin. Ber. 14,
" " -----	" -----	1.050, 16° -----	2543.
" " -----	" -----	1.04674, 20° -----	Petri. Ber. 14, 2785.
Methyl crotaconate -----	$C_7 H_{10} O_4$ -----	1.14, 15° -----	Gladstone. Bei. 9,
Ethyl acetocitrate -----	$C_{14} H_{22} O_8$ -----	1.1459, 15° -----	249.
Ethyl terebate -----	$C_9 H_{14} O_4$ -----	1.111, 16° -----	Knops. V. H. V.
			1887, 17.
			Claus. A. C. P. 191,
			78.
			Ruhemann. Ber. 20,
			802.
			Roser. A. C. P. 220,
			255.

17th. Glycerin and its Derivatives.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Glycerin, or glycerol	$C_3 H_5 (O H)_3$	1.27, 10°	Chevreul.
"	"	1.28, 15°	Pelouze. Ann. (2), 63, 19.
"	"	1.260, 15°.5	Watts' Dictionary.
"	"	1.115, 12°.5	Sokoloff. A. C. P. 106, 95.
"	"	1.2636, 15°	Mendelejeff. J. 13, 7.
"	"	1.26949, 6°.7	} Mendelejeff. A. C. P. 114, 165.
"	"	1.26244, 16°.6	
"	"	1.2609	Godeffroy. C. C. (3), 6, 34.
"	" Cryst.	1.261, 15°.5	Roos. C. N. 33, 39.
"	"	1.2688, 0°	Emo. Bei. 6, 663.
"	"	1.2590, 20°	Brühl. Bei. 4, 782.
"	"	1.262, 17°.5	Strohmer. Ber. 17, ref. 206.
"	"	1.2653, 15°	Gerlach. Ber. 17, ref. 522.
"	"	1.26241, 15°	} Perkin. J. P. C. (2), 32, 523.
"	"	1.25881, 25°	
Hexyl glycerin	$C_6 H_{11} (O H)_3$	1.0936, 0°	Orloff. A. C. P. 233, 359.
Triethyl diglycerin	$C_{12} H_{26} O_5$	1.00, 14°	Reboul and Lourenço. J. 14, 675.
Glycerin ether	$(C_3 H_5)_2 O_3$	1.0907, 18°	Gegerfeldt. J. 24, 401.
"	"	1.16, 16°	Zotta. A. C. P. 174, 87.
"	"	1.1453, 0°	Silva. J. C. S. 40, 1122.
Glycide	$C_3 H_8 O_2$	1.165, 0°	Hanriot. Ann. (5), 17, 62.
Ethyl glycide	$C_5 H_{10} O_2$	1.00	Reboul. J. 13, 465.
"	"	.94, 12°	Henry. B. S. C. 18, 232.
Amyl glycide	$C_8 H_{16} O_2$	.90, 20°	Reboul. J. 13, 463.
Aceto-glyceral	$C_5 H_{10} O_3$	1.081, 0°	Harnitzky and Menschutkin. J. 18, 506.
Valero-glyceral	$C_8 H_{16} O_3$	1.027, 0°	" "
Trimethylin	$C_6 H_{14} O_3$	.9483, 0°	Alsberg. J. 17, 495.
Diethylin	$C_7 H_{16} O_3$	.92	Berthelot. J. 7, 450.
Triethylin	$C_9 H_{20} O_3$	.8955, 15°	Alsberg. J. 17, 495.
Triglycerin tetrethylin	$C_{17} H_{36} O_7$	1.022, 14°	Reboul and Lourenço. J. 14, 675.
Ethylamylin	$C_{10} H_{22} O_3$	.92	Reboul. J. 13, 465.
Monamylin	$C_8 H_{18} O_3$	.98, 20°	Reboul. J. 13, 464.
Diamylin	$C_{13} H_{28} O_3$	.907, 9°	Reboul. J. 13, 465.
Monoallylin	$C_6 H_{12} O_3$	1.1160, 0°	} Tollens. A. C. P. 156, 149.
"	"	1.1013, 25°	
Diformin	$C_5 H_8 O_5$	1.304, 15°	Van Romburgh. Ber. 14, 2827.
Monacetin	$C_5 H_{10} O_4$	1.20	Berthelot. J. 6, 455.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Diacetin -----	$C_7 H_{12} O_5$ -----	1.184 -----	Berthelot. J. 6, 455.
" -----	" -----	1.148, 23° -----	Laufer. J. 1876, 343
Triacetin -----	$C_9 H_{14} O_6$ -----	1.174 -----	Berthelot. J. 7, 449.
Epiacetin -----	$C_5 H_8 O_3$ -----	1.129, 20° -----	Breslauer. J. P. C. (2), 20, 188.
Polymer of epiacetin -----	$(C_5 H_8 O_3)_n$ -----	1.204, 20° -----	" "
Monobutyryl -----	$C_7 H_{14} O_4$ -----	1.088 -----	Berthelot. J. 6, 455.
Dibutyryl -----	$C_{11} H_{20} O_5$ -----	1.081 } -----	" "
" -----	" -----	1.084 } -----	
Tributyryl -----	$C_{15} H_{26} O_6$ -----	1.056 -----	Berthelot. J. 7, 449.
Monovalerin -----	$C_8 H_{16} O_4$ -----	1.100 -----	Berthelot. J. 6, 454.
Divalerin -----	$C_{13} H_{24} O_5$ -----	1.059 -----	" "
Cocinin -----	$C_{42} H_{80} O_6$ -----	.92, 8°, s -----	Brandes.
Tristearin -----	$C_{57} H_{110} O_6$ -----	.987, 10° -----	Kopp. A. C. P. 93, 194.
" -----	" -----	.9872 } -----	} Three modifica- tions. Duffy. J. 5, 510.
" -----	" -----	.9877 } 15° -----	
" -----	" -----	.9867 } -----	
" -----	" -----	.9600, 51°.5 } -----	
" -----	" -----	1.0101, 15° -----	
" -----	" -----	1.0178 } 15° -----	
" -----	" -----	1.0179 } -----	
" -----	" -----	1.009, 51°.5 } -----	
" -----	" -----	.9931, 65°.5 } -----	
" -----	" -----	.9746, 68°.2 } -----	
" Liquid -----	" -----	.9245, 65°.5 -----	
Monolein -----	$C_{21} H_{40} O_4$ -----	.947 -----	Berthelot. J. 6, 454.
Diolein -----	$C_{39} H_{72} O_5$ -----	.921, 21° -----	" "
Ethyl glycerate -----	$C_5 H_{10} O_4$ -----	1.193, 6° -----	Henry. Ber. 4, 701.
Benzoiein -----	$C_{10} H_{12} O_4$ -----	1.228 -----	Berthelot. J. 6, 455.
Glycerin salicylate -----	$C_{10} H_{12} O_5$ -----	1.3655 -----	Göttig. Ber. 10, 1818.
Glycerin cinnamate -----	-----	1.2704 -----	Kahlbaum. Ber. 16, 1491.
" " -----	-----	1.2708 -----	

18th. The Allyl Group.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Allyl alcohol -----	$C_3 H_5. O H$ -----	.8581, 0° -----	{ Tollens and Hen- ninger. A. C. P. 156, 134.
" " -----	" -----	.8478, 27° -----	
" " -----	" -----	.8709, 0° -----	Additional values are given. Tollens. A. C. P. 158, 104.
" " -----	" -----	.81832, 62° -----	
" " -----	" -----	.7846, 97° -----	
" " -----	" -----	.8569, 15°.5 -----	
" " -----	" -----	.86990, 0° -----	Dittmar and Steuart. P. R. S. G. 10, 64.
" " -----	" -----	.77998, 96°.6 -----	
" " -----	" -----	.8724, 0° -----	Thorpe. J. C. S. 37, 371.
" " -----	" -----	.7830, 96°.5 -----	
" " -----	" -----	.7809, 94°.4 -----	Zander. A. C. P. 214, 181.
" " -----	" -----	-----	Schiff. G. C. I. 13, 177.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Allyl alcohol	$C_3 H_5. O H$	.8540, 20°	Brühl. A. C. P. 200, 139.
" "	"	.8563, 23°	Gladstone. Bei. 9, 249.
" "	"	.85778, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	.85067, 25°	
Ethylvinyl alcohol	$C_4 H_7. O H$	.834, 0°	Nevolé. J. C. S. 32, 868.
" "	"	.818, 21°	
" "	"	.827, 0°	Lieben. J. C. S. 32, 868.
" "	"	.81, 22°	
Ethylvinylcarbinol	$C_5 H_{10} O$	.856, 0°	E. Wagner. B. S. C. 42, 330.
Methyl isocrotyl alcohol	$C_6 H_{12} O$	.8604	Wurtz. J. 17, 515.
" " "	"	.8625	
" " "	"	.842, 16°.2	Crow. C. N. 36, 264.
" " " ?	"	.891, 10°	Destrem. Ann. (5), 27, 50.
Allyldimethylcarbinol	"	.8438, 0°	Saytzeff. A. C. P. 185, 151.
" "	"	.8307, 18°	
Diallyl monohydrate	"	.8367, 0°	Wurtz. J. 17, 515.
Allyldiethylcarbinol	$C_8 H_{16} O$	.8891, 0°	{ Schirokoff and Saytzeff. A. C. P. 196, 114.
" "	"	.8711, 20°	
Allylmethylpropylcarbinol.	"	.8486, 0°	Semljanizin. Ber. 12, 2375.
" "	"	.8345, 20°	
Isopropylallyldimethylcarbinol.	$C_9 H_{18} O$	.829, 17°.8	Dieff. J. P. C. (2), 27, 369.
Allyldipropylcarbinol	$C_{10} H_{20} O$	.8602, 0°	P. and A. Saytzeff. Ber. 11, 1939.
" "	"	.8427, 24°	
Allyldiisopropylcarbinol	"	.8671, 0°	Lebedinsky. J. P. C. (2), 23, 23.
Propargyl alcohol	$C_3 H_4 O$	.9628, 21°	Henry. B. S. C. 18, 236.
" "	"	.9715, 20°	Brühl. Bei. 4, 780.
Diallylcarbinol	$C_7 H_{12} O$	.8758, 0°	M. Saytzeff. A. C. P. 185, 129.
" "	"	.8644, 12°	
" "	"	.8478, 32°	
Diallylmethylcarbinol	$C_8 H_{14} O$	.8638, 0°	Sorokin. A. C. P. 185, 169.
" "	"	.8523, 13°	
Diallylethylcarbinol	$C_9 H_{16} O$	.8776, 0°	Smirensky. Ber. 14, 2688.
" "	"	.8637, 17°	
Diallylpropylcarbinol	$C_{10} H_{18} O$	.8707, 0°	P. and A. Saytzeff. Ber. 11, 1259.
" "	"	.8564, 20°	
Diallylisopropylcarbinol	"	.8647, 0°	Rjabinin and Saytzeff. Ber. 12, 689.
" "	"	.8512, 20°	
Vinyl ethyl oxide	$C_2 H_3. C_2 H_5. O$	.7625, 17°.5	Wislicenus. A. C. P. 192, 109.
Methyl allyl oxide	$C H_3. C_3 H_5. O$	.77, 11°	Henry. B. S. C. 18, 232.
Ethyl allyl oxide	$C_2 H_5. C_3 H_5. O$	.7651, 20°	Brühl. Bei. 4, 780.
Allyl oxide	$(C_3 H_5)_2. O$	.8223, 0°	Zander. A. C. P. 214, 181.
" "	"	.7217, 94°.3	
Methyl propargyl oxide	$C H_3. C_3 H_3. O$	.83, 12°.5	Henry. B. S. C. 18, 232.
Ethyl propargyl oxide	$C_2 H_5. C_3 H_3. O$	.8326, 20°	Brühl. Bei. 4, 780.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Amyl propargyl oxide ---	$C_5 H_{11} \cdot C_3 H_3 \cdot O$ ----	.84, 12° -----	Henry. B. S. C. 18, 232.
Diallylcarbyl methyl oxide. " " "	$C_7 H_{11} \cdot C H_3 \cdot O$ -----	.8258, 0° ---- } .8096, 20° -- }	Rjabinin. Ber. 12, 2374.
Diallylcarbyl ethyl oxide. " " "	$C_7 H_{11} \cdot C_2 H_5 \cdot O$ -----	.8218, 0° } .8023, 20° } --	" "
Isopropylallyldimethylcarbyl methyl oxide.	$C_9 H_{17} \cdot C H_3 \cdot O$ -----	.8027, 4° -----	Kononowitsch. Ber. 18, ref. 105.
Allyl formate -----	$C_4 H_6 O_2$ -----	.9322, 17°.5----	Tollens, Weber, and Kempf. J. 21, 450.
Allyl acetate -----	$C_5 H_8 O_2$ -----	.8220, 103° ----	Schiff. G. C. I. 13, 177.
" " -----	" -----	.9276, 20° -----	Brühl. Bei. 4, 780.
" " -----	" -----	.9258, 24°.5----	Gladstone. Bei. 9, 249.
Ethylvinyl acetate-----	$C_6 H_{10} O_2$ -----	.896, 0° -----	Nevolé. J. C. S. 32, 868.
" " -----	" -----	.892, 0° -----	Lieben. J. C. S. 32, 868.
Methylisocrotyl acetate --	$C_8 H_{14} O_2$ -----	.912 -----	Wurtz. J. 17, 514.
Allyldimethylcarbyl acetate. " "	" -----	.9007, 0° ---- }	M. and A. Saytzeff. A. C. P. 185, 151.
" " " "	" -----	.8832, 18°.5 }	Saytzeff. Ber. 11, 1939.
Allyldipropylcarbyl acetate. " "	$C_{12} H_{22} O_2$ -----	.8903, 0° ---- }	
" " " "	" -----	.8733, 21° -- }	
Propargyl acetate-----	$C_5 H_6 O_2$ -----	1.0031, 12° ----	Henry. J. C. S. (2), 11, 1123.
" " -----	" -----	1.0052, 20° ----	Brühl. Bei. 4, 780.
Diallylcarbyl acetate-----	$C_9 H_{14} O_2$ -----	.9167, 0° ---- }	M. Saytzeff. A. C. P. 185, 129.
" " " "	" -----	.8997, 17°.5 }	
Diallylmethylcarbyl acetate. " "	$C_{10} H_{16} O_2$ -----	.8997, 0° ---- }	Sorokin. A. C. P. 185, 169.
" " " "	" -----	.8733, 21° -- }	
Allylacetic acid-----	$C_5 H_8 O_2$ -----	.98656, 12° } .98416, 15° } .97670, 25° }	Perkin. J. C. S. 49, 205.
" " " "	" -----		
" " " "	" -----		
Ethyl allylacetate-----	$C_7 H_{12} O_2$ -----	.9222, 0° -----	Wurtz. J. 21, 446.
Allyloctylic acid -----	$C_{11} H_{20} O_2$ -----	.91020, 25° } .89930, 45° }	Perkin. J. C. S. 49, 205.
" " " "	" -----		
Ethyl allyloctylate -----	$C_{13} H_{24} O_2$ -----	.88271, 15° } .87658, 25° }	" "
" " " "	" -----		
Diallylacetic acid-----	$C_8 H_{12} O_2$ -----	.9495, 25° -----	Wolff. Ber. 10, 1957.
" " " "	" -----	.9578, 13° -----	Reboul. J. C. S. 32, 594.
" " " "	" -----	.95756, 12° } .95547, 15° } .94913, 25° }	Perkin. J. C. S. 49, 205.
" " " "	" -----		
Ethyl methoxyldiallylacetate.	$C_{11} H_{18} O_3$ -----	.96066, 20° ----	Barataeff. J. P. C. (2), 35, 2.
Allyl acetacetate -----	$C_7 H_{10} O_3$ -----	.99272, 15° } .98542, 25° }	Perkin. J. P. C. (2), 32, 523.
" " " "	" -----		
Ethyl allylacetacetate-----	$C_9 H_{14} O_3$ -----	.9938, 13°.5----	Gladstone. Bei. 9, 249.
" " " "	" -----	.982, 20° -----	Zeidler. B. S. C. 23, 73.
Ethyl diallylacetacetate --	$C_{12} H_{18} O_3$ -----	.948, 25° -----	Wolff. Ber. 10, 1956.
Ethyl diallyloxyacetate --	$C_{10} H_{15} O_3$ -----	.9873, 0° ---- }	Saytzeff. Ber. 9, 77.
" " " "	" -----	.9718, 18° } --	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Allyl oxalate-----	$C_8 H_{10} O_4$ -----	1.055, 15°.5----	Hofmann and Ca- hours. J. 9, 585.
Ethyl allylmalonate-----	$C_{10} H_{16} O_4$ -----	1.018, 16° ----	Conrad and Bischoff. Ber. 13, 595.
“ “-----	“-----	1.01475, 14° --	Gladstone. Bei. 9, 249.
“ “-----	“-----	1.01397, 15° }-----	Perkin. J. P. C. (2), 32, 523.
“ “-----	“-----	1.00620, 25° }-----	
Ethyl diallylmalonate-----	$C_{13} H_{20} O_4$ -----	.996, 14° ----	Conrad and Bischoff. Ber. 13, 595.
“ “-----	“-----	.99328, 20° ----	Matwejeff. Ber. 21, 181.
“ “-----	“-----	1.00620, 6°.5 }-----	Perkin. J. C. S. 49, 205.
“ “-----	“-----	.99940, 15° }-----	
“ “-----	“-----	.99252, 25° }-----	
Butallylmethylcarbin ox- ide.	$C_6 H_{12} O_2$ -----	1.0099, 21° ----	Kablukow. Ber. 21, ref. 54.
Butallylmethyl pinakone	$C_{12} H_{22} O_2$ -----	.9632, 0° ----	Kablukow. Ber. 21, ref. 55.
“ “-----	“-----	.9452, 24° ----	
Derivative of tetrabrom- diallylcarbin acetate.	$C_{13} H_{20} O_7$ -----	1.18013, 0° ----	Dieff. J. P. C. (2), 35, 20.

19th. Erythrite, Mannite, and the Carbohydrates.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Erythrite or erythrol-----	$C_4 H_6 (O H)_4$ -----	1.590 -----	Lamy. J. 5, 676.
“ “-----	“-----	1.449 }-----	Schröder. Ber. 12, 1561.
“ “-----	“-----	1.452 } 4°-----	
Anhydride of erythrol-----	$C_4 H_6 O_2$ -----	1.1323, 0° ----	Przybytek. Ber. 17, 1091.
“ “-----	“-----	1.1132, 18° }-----	
Mannite or mannitol-----	$C_6 H_8 (O H)_6$ -----	1.521 -----	Prunier. Ann. (5), 15, 22.
“ “-----	“-----	1.485 }-----	Schröder. Ber. 12, 1561.
“ “-----	“-----	1.486 } 4°-----	
“ “-----	“-----	1.489 }-----	
Dulcite or dulcitol-----	“-----	1.466, 15° ----	Eichler. J. 9, 665.
Sorbite-----	$(C_6 H_{14} O_6)_2 \cdot H_2 O$ -----	1.654, 15° ----	Pelouze. J. 5, 655.
Pinite-----	$C_6 H_{12} O_5$ -----	1.520 -----	Berthelot. J. 8, 675.
Quercite-----	“-----	1.5845 -----	Prunier. Bei. 2, 68.
Cane sugar, or saccharose	$C_{12} H_{22} O_{11}$ -----	1.606 -----	Brisson. P. des C.
“ “-----	“-----	1.600 -----	Schübler and Renz.
“ “-----	“-----	1.593 -----	Filhol.
“ “-----	“-----	1.596 -----	Playfair and Joule. M. C. S. 2, 401.
“ “-----	“-----	1.5578 -----	Brix. J. 7, 618.
“ “-----	“-----	1.63 -----	Dubrunfaut.
“ “-----	“-----	1.5951, 15° ----	Maumené. B. S. C. 22, 33.
“ “-----	“-----	1.588, 4° ----	Schröder. Ber. 12, 561.
“ “-----	“-----	1.589 -----	W. C. Smith. Am. J. P. 53, 148.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Cane sugar, or saccharose	$C_{12}H_{22}O_{11}$	1.58046, 17°.5	Gerlach.
" " " Fused, vitreous.	"	1.996, 14°.5	Morin. J. Ph. C. (4), 28, 34.
" " " Molten	"	1.6	Quinke. P. A. 138, 141.
" " " "	"	1.5984	{ Wiedemann and Lüdeking. P. A. (2), 25, 151.
" " " Barley sugar.	"	1.5122	
" " " "	"	1.5928	Zehnder. P. A. (2), 29, 260.
Milk sugar, or lactose	"	1.534	Filhol.
" " " "	"	1.53398, 4°	Playfair and Joule. J. C. S. 1, 138.
" " " "	"	1.525, 4°	Schröder. Ber. 12, 561.
" " " "	"	1.533	W. C. Smith. Am. J. P. 53, 148.
Melezitose	$C_{12}H_{22}O_{11} \cdot H_2O$	1.540, 17°.5	Alekhine. J.C.S. 50, 684.
Glucose	$C_6H_{12}O_6 \cdot H_2O$	1.3861	{ Payen and Persoz.
"	"	1.391	
"	"	1.54	{ 11°
"	"	1.57	
" Fused	"	1.3	Quinke. P. A. 138, 141.
Inosite. Anhydrous	$C_6H_{12}O_6$	1.752	Tanret and Villiers. Ann. (5), 23, 392.
"	$C_6H_{12}O_6 \cdot 2H_2O$	1.1154, 5°	Vohl. J. 11, 489.
"	"	1.535, 8°	{ Tanret and Villiers. C. R. 86, 486.
"	"	1.524, 15°	
Bergenite	$C_8H_{10}O_5 \cdot H_2O$	1.5445	Morelli. Ber. 14, 2694.
Starch	$(C_6H_{10}O_5)_n$	1.505	Payen.
"	"	1.530	Dietrich. Z. A. C. 5, 51.
"	"	1.56	Kopp. A. C. P. 35, 38.
" Arrowroot	"	1.5045, air dried	{ Flückiger. Z. C. 10, 445.
" Potato	"	1.5029, "	
" " "	"	1.6330, dried at 100°.	
Dextrin	"	1.03843	O'Sullivan. J. 27, 880.
Inulin	"	1.470	Dragendorff. J. 22, 748.
"	"	1.462	Dubrunfaut.
"	"	1.3491	Kiliani. A. C. P. 205, 151.
Cellulose	"	1.525	Weltzien's "Zusam- menstellung."
Gum	"	1.487, air dried	{ Flückiger. Z. C. 10, 445.
"	"	1.525, dried at 100°.	
" Gum-arabic	"	1.355	{ Guérin-Varry. P.A. 29, 50.
" " tragacanth	"	1.384	
" Senegal	"	1.436	
" Bassora	"	1.359	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Graminin -----	$6 \text{ C}_6 \text{ H}_{10} \text{ O}_5 \cdot \text{H}_2 \text{ O}$ ---	1.522, 12° --	Ekstrand and Johanson. Ber. 21, 594.
Phlein -----	“ ---	1.480 -----	
Octaceto-diglucose -----	$\text{C}_{12} \text{ H}_{14} (\text{C}_2 \text{ H}_3 \text{ O}_2)_8 \text{ O}_{11}$ ---	1.27, 16° -----	Demole. Ber. 12, 1936.
Octaceto-saccharose -----	“ ---	1.27, 16° -----	“ “

20th. Miscellaneous Non-Aromatic Compounds.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Acetopropyl alcohol -----	$\text{C}_5 \text{ H}_{10} \text{ O}_2$ -----	1.00514, 15°	Perkin, Jr. J. C. S. 51, 830.
“ “ -----	“ -----	1.00197, 20°	
“ “ -----	“ -----	.99896, 25°	
Acetobutyl alcohol -----	$\text{C}_6 \text{ H}_{12} \text{ O}_2$ -----	1.0143, 0° -----	Lipp. Ber. 18, 3281.
“ “ -----	“ -----	.99771, 4° --	Perkin, Jr. J. C. S. 51, 719.
“ “ -----	“ -----	.98947, 15°	
“ “ -----	“ -----	.98270, 25°	
Methyl orthoformate -----	$\text{C}_4 \text{ H}_{10} \text{ O}_3$ -----	.974, 23° -----	Deutsch. Ber. 12, 115.
Ethyl orthoformate -----	$\text{C}_7 \text{ H}_{16} \text{ O}_3$ -----	.8964 -----	Williamson.
Propyl orthoformate -----	$\text{C}_{10} \text{ H}_{22} \text{ O}_3$ -----	.879, 23° -----	Deutsch. Ber. 12, 115.
Isobutyl orthoformate -----	$\text{C}_{13} \text{ H}_{28} \text{ O}_3$ -----	.861 -----	“ “
Isoamyl orthoformate -----	$\text{C}_{16} \text{ H}_{34} \text{ O}_3$ -----	.864 -----	“ “
Diethoxyl ether -----	$\text{C}_8 \text{ H}_{18} \text{ O}_3$ -----	.8924, 21° -----	Lieben. J. 20, 546.
Derivative of isobutylaldehyde.	$\text{C}_8 \text{ H}_{14} \text{ O}$ -----	.9575, 0° -----	Oeconomides. Ber. 14, 2581.
“ “ -----	$\text{C}_{10} \text{ H}_{20} \text{ O}_2$ -----	.9415, 0° -----	“ “
Derivative of valeral -----	$\text{C}_{10} \text{ H}_{18} \text{ O}$ -----	.9027, 17° -----	Borodin. J. 17, 339.
“ “ -----	$\text{C}_{20} \text{ H}_{38} \text{ O}_3$ -----	.895 } -----	Borodin. Ber. 5, 480.
“ “ -----	“ -----	.900 } -----	
Derivative of oenanthol -----	$\text{C}_{28} \text{ H}_{50} \text{ O}$ -----	.8831, 15° --	Perkin. Ber. 15, 2805.
“ “ -----	“ -----	.8751, 30° --	
“ “ -----	“ -----	.8723, 35° --	
“Acetyl valeryl” -----	$\text{C}_7 \text{ H}_{12} \text{ O}_2$ -----	.8804, 15°.5 -----	Olewinsky. J. 14, 463.
Diacetone alcohol -----	$\text{C}_6 \text{ H}_{12} \text{ O}_2$ -----	.9306, 25° -----	Heintz. A. C. P. 178, 349.
Methoxylmethyl ethyl acetone.	$\text{C}_7 \text{ H}_{14} \text{ O}_2$ -----	.855, 20° -----	James. J. C. S. 49, 50.
Dimethoxyl diethyl acetone.	$\text{C}_9 \text{ H}_{18} \text{ O}_3$ -----	.886, 15° -----	“ “
From diethylacetone -----	$\text{C}_{20} \text{ H}_{34} \text{ O}_2$ -----	.934, 12° -----	Geuther. J.P.C. (2), 6, 160.
Ethyl diacetone carbonate	$\text{C}_{10} \text{ H}_{18} \text{ O}_3$ -----	.9738, 20° -----	Frankland and Duppa. J. 18, 306.
Mesityl oxide -----	$\text{C}_6 \text{ H}_{10} \text{ O}$ -----	.848, 23° -----	Fittig. J. 12, 344.
“ “ -----	“ -----	.8528, 19° -----	Gladstone. Bei. 9, 249.
“ “ -----	“ -----	.8578, 20° -----	Brühl. A. C. P. 235, 1.
Homologue of mesityl oxide.	$\text{C}_8 \text{ H}_{14} \text{ O}$ -----	.8547, 15°.4 -----	Schramm. Ber. 16, 1581.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Phorone -----	$C_9 H_{14} O$ -----	.932 } 12° -----	Fittig. J. 12, 344.
" -----	" -----	.939 } -----	
" -----	" -----	.9614, 20° -----	Schwanert. J. 15, 464.
" -----	" -----	.9645, 15° -----	Schulze. Ber. 15, 64.
" -----	" -----	.885, 20° -----	Brühl. A. C. P. 235, 1.
" -----	" -----	.8793, 27° -----	
" -----	" -----	.8785, 28° -----	
" -----	" -----	.8776, 29° -----	
Aldol -----	$C_4 H_8 O_2$ -----	1.1208, 0° -----	Wurtz. B. S. C. 18, 436.
" -----	" -----	1.1094, 16° -----	
" -----	" -----	1.0819, 49°.6 -----	
Derivative of aldol -----	$C_8 H_{16} O_4$ -----	1.0941 } 0° {	Wurtz. C. R. 97, 1526.
" " -----	" -----	1.0951 } -----	
" " -----	" -----	1.0953 } -----	
Diacetate from the above compound.	$C_{12} H_{20} O_6$ -----	1.095, 0° -----	" "
Derivative of laevulinic ether.	$C_{14} H_{22} O_7$ -----	1.097, 15° -----	Conrad and Guthzeit. Ber. 17, 2286.
Diethyl glycollic ether ---	$C_{20} H_{36} O_{10}$ -----	1.01, 19° -----	Geuther. J. 20, 455.
Propidene acetic acid ---	$C_5 H_8 O_2$ -----	.9922, 15° -----	Komnenos. A. C. P. 218, 167.
Acetyl trimethylene -----	$C_5 H_8 O$ -----	.90471, 15° -----	Perkin, Jr. J. C. S. 51, 832.
" " -----	" -----	.90083, 20° -----	
" " -----	" -----	.89706, 25° -----	
Ethyl acetyltrimethylene-carboxylate. " --	$C_8 H_{12} O_3$ -----	1.03436, 4° -----	Perkin, Jr. J. C. S. 47, 801.
" " -----	" -----	1.03256, 6°.5 -----	
" " -----	" -----	1.02549, 15° -----	
" " -----	" -----	1.01834, 25° -----	Gladstone. Ber. 19, 2563.
" " -----	" -----	1.0425, 25°.2 -----	
" " -----	" -----	1.05174 } 15° -----	
" " -----	" -----	1.05152 } -----	Two preparations. Perkin, Jr. J. C. S. 51, 826.
" " -----	" -----	1.04810, 20° -----	
" " -----	" -----	1.04390, 25° -----	
" " -----	" -----	1.04703 } 15° -----	
" " -----	" -----	1.04753 } -----	
" " -----	" -----	1.03930, 25° -----	
Ethyl trimethylenedicarboxylate.	$C_9 H_{14} O_4$ -----	1.0708, 7° -----	Gladstone. J. C. S. 51, 852.
" " -----	" -----	1.06455, 15° -----	Perkin. J. C. S. 51, 852.
" " -----	" -----	1.05657, 25° -----	
" " -----	" -----	1.06463, 15° -----	
" " -----	" -----	1.05664, 25° -----	Perkin, Jr. J. C. S. 47, 801.
Ethyl trimethylenetricarboxylate.	$C_{12} H_{18} O_6$ -----	1.127, 15° -----	Conrad and Guthzeit. Ber. 17, 1186.
Tetramethylenemonocarboxylic acid. " --	$C_5 H_8 O_2$ -----	1.05480, 15° -----	Perkin. J. C. S. 51, 1.
" " -----	" -----	1.05116, 20° -----	
" " -----	" -----	1.04761, 25° -----	
Ethyl tetramethylenedicarboxylate.	$C_{10} H_{16} O_4$ -----	1.0484, 14° -----	Gladstone. Bei. 9, 249.
" " -----	" -----	1.05328, 9° -----	Perkin. J. C. S. 51, 1.
" " -----	" -----	1.04817, 15° -----	
" " -----	" -----	1.04051, 25° -----	
Ethyl acetyltetramethylenedicarboxylate.	$C_9 H_{14} O_3$ -----	1.0668, 13° -----	Gladstone. Bei. 9, 249.
Methylpentamethylene-monocarboxylic acid. }	$C_7 H_{12} O_2$ -----	1.02054, 15° -----	Two lots. Perkin. J. C. S. 53, 195 and 199.
" " -----	" -----	1.01739, 20° -----	
" " -----	" -----	1.01438, 25° -----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methylpentamethylene- monocarboxylic acid. }	$C_7 H_{12} O_2$ -----	1.0256, 4° --	Two lots. Perkin. J. C. S. 53, 195 and 199.
“ “-----	“-----	1.0208, 10°	
“ “-----	“-----	1.0172, 15°	
“ “-----	“-----	1.0139, 20°	
“ “-----	“-----	1.0109, 25°	
Methylpentamethylene methyl ketone. }	$C_8 H_{14} O$ -----	.9222, 4° --	Perkin. J. C. S. 53, 200.
“ “-----	“-----	.9174, 10°	
“ “-----	“-----	.9136, 15°	
“ “-----	“-----	.9100, 20°	
“ “-----	“-----	.9070, 25°	
Methylhexamethylene- monocarboxylic acid. }	$C_8 H_{14} O_2$ -----	1.0079, 4° --	Perkin. J. C. S. 53, 209.
“ “-----	“-----	1.0033, 10°	
“ “-----	“-----	.99982, 15°	
“ “-----	“-----	.9966, 20°	
“ “-----	“-----	.9940, 25°	
Methyldehydrohexone	$C_6 H_{10} O$ -----	.92272, 4° --	Perkin. J. C. S. 51, 719.
“ “-----	“-----	.91278, 15°	
“ “-----	“-----	.90502, 25°	
Ethyl methyldehydro- hexonecarboxylate. }	$C_9 H_{14} O_3$ -----	1.06457, 15°	Three lots. Perkin. J. C. S. 51, 711 and 713.
“ “-----	“-----	1.05840, 25°	
“ “-----	“-----	1.06840, 15°	
“ “-----	“-----	1.06470, 20°	
“ “-----	“-----	1.06187, 25°	
“ “-----	“-----	1.0744, 9° --	
“ “-----	“-----	1.0696, 15°	
“ “-----	“-----	1.0660, 20°	
Ethyl methenyltricarbox- ylate.	$C_{10} H_{16} O_6$ -----	1.10, 19° -----	Conrad. Ber. 12, 1236.
Ethyl ethenyltricarboxy- late.	$C_{11} H_{18} O_6$ -----	1.089, 17° -----	Bischoff. A. C. P. 214, 39.
Methyl diethyl- β -methyl- ethenyltricarboxylate.	“-----	1.079, 15° -----	Bischoff. A. C. P. 214, 56.
Ethyl β -methylethenyltri- carboxylate.	$C_{12} H_{20} O_6$ -----	1.092, 16° -----	Bischoff. Ber. 13, 2165.
Ethyl α β -dimethylethe- nyltricarboxylate.	$C_{13} H_{22} O_6$ -----	1.0745, 15° -----	Bischoff and Rach. A. C. P. 234, 54.
Ethyl butenyltricarboxy- late.	“-----	1.065, 17° -----	Polko. A. C. P. 242, 113.
Ethyl isobutenyltricar- boxylate.	“-----	1.064, 17° -----	Barnstein. A. C. P. 242, 126.
“ “-----	“-----	1.0805, 18° -----	Levy and Englän- der. A. C. P. 242, 210.
Ethyl propylethenyltri- carboxylate.	$C_{14} H_{24} O_6$ -----	1.052, 13° -----	Waltz. A. C. P. 214, 58.
Ethyl dicarboxylgluta- conate.	$C_{15} H_{22} O_8$ -----	1.131, 15° -----	Conrad and Guth- zeit. Ber. 15, 2842.
Ethyl isoallylenetetra- carboxylate.	$C_{15} H_{24} O_8$ -----	1.102, 15° -----	Bischoff. Ber. 13, 2164.
Ethyl dimethylacetylene- tetracarboxylate.	$C_{16} H_{26} O_8$ -----	1.114, 15° -----	Bischoff and Rach. A. C. P. 234, 54.
Methylisopropenylcarb- inol.	$C_5 H_{10} O$ -----	.8571, 0° -----	Kondakoff. Ber. 18, ref. 660.
“ “-----	“-----	.8419, 20°.5	
Pyruvic acetate -----	$C_5 H_8 O_3$ -----	1.053, 11° -----	Henry. B. S. C. 19, 219.
Ethyl pyruvyl ether -----	$C_5 H_{10} O_2$ -----	.92, 18° -----	Henry. Ber. 14, 2272.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Parasorbic acid	$C_6 H_8 O_2$	1.068, 15°	Hofmann. J. C. S. 12, 322.
Derivative of mannite	$C_6 H_8 O$	.9396, 0°	Fauconnier. J. C. S. 48, 743.
Methyl mucate	$C_8 H_{14} O_8$	1.48 } 20°	Malaguti. Ann. (2), 63, 86.
" "	" "	1.50 }	
Ethyl mucate	$C_{10} H_{18} O_8$	1.17 } 20°	" "
" "	" "	1.32 }	
Valerylene diacetate	$C_9 H_{16} O_4$	.963	Guthrie and Kolbe. J. 12, 365.
Conylene diacetate	$C_{12} H_{20} O_4$	.988, 18°.2	Wertheim. J. 16, 438.
Amenyl valerone	$C_{14} H_{26} O$	.836, 7°	Geuther, Fröhlich, and Loos. Ber. 13, 1356.
Linoleic acid	$C_{18} H_{32} O_2$	.9206, 14°	Schüler. J. 10, 359.
Ricinoleic acid	$C_{18} H_{34} O_3$	.940, 15°	Saalmüller. J. 1, 562.
" "	" "	.9502, 15°	Norton and Richardson. A. C. J. 10, 57.
Distillate from linoleic acid.	$C_{20} H_{36} O_2$	.9108, 15°	" "
Distillate from ricinoleic acid.	" "	.912	" "
Furfurane	$C_4 H_4 O$	.9644, 0°	Henninger. Ann. (6), 7, 209.
" "	" "	.9444, 15°	
Dihydrofurfurane	$C_4 H_6 O$	.9663 } 0°	" "
" "	" "	.9684 }	
" "	" "	.9503, 15°	" "
Erythrol. (Crotonylene glycol).	$C_4 H_8 O_2$	1.06165, 0°	
" "	" "	1.04653, 20°	
Furfurol	$C_5 H_4 O_2$	1.1648, 15°.6	Stenhouse. J. 1, 732.
" "	" "	1.1636, 13°.5	Stenhouse. J. 3, 513.
" "	" "	1.168, 15°.5	Fownes. P. T. 1845, 253.
" "	" "	1.134 } 15°	Völckel. J. 5, 652.
" "	" "	1.150 }	
" "	" "	1.1006, 27°	Stenhouse. P. M. (3), 18, 124.
" "	" "	.9310, 162°	Ramsay. J. C. S. 35, 463.
" "	" "	1.0025 } 160°.5	{ Schiff. G. C. I. 13, 177.
" "	" "	1.0026 } bp.	
" "	" "	1.1344, 19°	Gladstone. Bei. 9, 249.
" "	" "	1.1594, 20°	Brühl. A. C. P. 235, 1.
Ethylfurfurcarbinol	$C_7 H_{10} O_2$	1.066, 0°	Pawlinoff and Wagner. Ber. 17, 1967.
" "	" "	1.053, 15°.5	
Furfurbutylene	$C_8 H_{10} O$	.9509, 14°.5	Toennies and Staub. Ber. 17, 852.
Fucusol	$C_5 H_4 O_2$	1.150, 13°.5	Stenhouse. J. 3, 513.
Ethyl pyromucate	$C_7 H_8 O_2$	1.297, 20°	Malaguti. J. P. C. 41, 224.
Triethylpropylphycite	$C_9 H_{20} O_4$	.976, 0°	Wolff. A. C. P. 150, 56.
" "	" "	.96051, 16°.5	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Acid from petroleum -----	$C_{11} H_{20} O_2$ -----	.982, 0° -----	Hell and Medinger. Ber. 7, 1218.
" " " -----	" " -----	.969, 23° -----	
Ethyl ether of the above -----	$C_{13} H_{24} O_2$ -----	.939, 0° -----	" "
" " " acid. -----	" " -----	.919, 27° -----	
From epichlorhydrin and chlorocarbonic ether.	$C_6 H_{10} O_3$ -----	.9931, 21°.5 -----	Kelly. Ber. 11, 2226.

21st. Phenols.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Phenol -----	$C_6 H_5. O H$ -----	1.062, 20° -----	Runge. P. A. 32, 308.
" -----	" -----	1.065, 18° -----	Laurent. Ann. (3), 3, 195.
" -----	" -----	1.0627 -----	Scrugham. J. C. S. 7, 237.
" -----	" -----	1.0808, 0°, 1. } -----	Kopp. A. C. P. 95, 307.
" -----	" -----	1.0597, 32°.9 } -----	
" -----	" -----	1.0554 -----	Duclos. A. C. P. 109, 135.
" -----	" -----	1.068 -----	Church. J. C. S. 16, 76.
" -----	" -----	1.0667, 38° -----	Graebe.
" -----	" -----	1.0709, 38° -----	Zotta. A. C. P. 174, 87.
" -----	" -----	1.066, cryst. -----	Hamberg. Ber. 4, 751.
" -----	" -----	1.05433, 40° -----	Adrieenz. Ber. 6, 443.
" -----	" -----	1.04663, 50° -----	
" -----	" -----	1.03804, 60° -----	
" -----	" -----	1.02890, 70° -----	
" -----	" -----	1.01950, 80° -----	
" -----	" -----	1.01015, 90° -----	
" -----	" -----	1.00116, 100° -----	
" -----	" -----	1.0558, 46° -----	From four differ- ent sources. La- denburg. Ber. 7, 1687.
" -----	" -----	1.0463, 56° -----	
" -----	" -----	1.0567, 46° -----	
" -----	" -----	1.0470, 56° -----	
" -----	" -----	1.0560, 46° -----	
" -----	" -----	1.0467, 56° -----	
" -----	" -----	1.0559, 46° -----	
" -----	" -----	1.0476, 56° -----	Ramsay. J. C. S. 35, 463.
" -----	" -----	.8789, 186° -----	
" -----	" -----	1.0591, 40° -----	{ Bedson and Wil- liams. Ber. 14, 2551.
" -----	" -----	1.0545, 45° -----	
" -----	" -----	1.0722, 20° -----	Landolt. P. A. 122, 558.
" -----	" -----	1.0702, 20° -----	Brühl. Bei. 4, 782.
" -----	" -----	1.05810, 4° -----	Flink. Bei. 8, 262.
" -----	" -----	1.0598, 21° -----	Gladstone. Bei. 9, 249.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Phenol -----	$C_6H_5.OH$ -----	1.0906, 0°, 1. }	Pinette. A. C. P. 243, 32.
" -----	" -----	1.0387, 15°.5 }	
" -----	" -----	.9217, 182°.9 }	
Diphenol. Pyrocatechin--	$C_6H_4(OH)_2$. 1.2--	1.340 } 4°-- {	Schröder. Ber. 12,
" " -----	" -----	1.348 } ----- {	561.
" Resorcin -----	" 1.3-----	1.2728, 0° -- }	Calderon. J. R. C. 5
" " -----	" -----	1.2717, 15° }	313.
" " -----	" -----	1.276 } 4°-- {	Schröder. Ber. 12,
" " -----	" -----	1.289 } ----- {	561.
" " -----	" -----	1.1795, 100°.2--	Schiff. A. C. P. 223,
" Hydroquinone-----	" 1.4-----	1.324 } 4°-- {	247.
" " -----	" -----	1.328 } ----- {	Schröder. Ber. 12,
Triphenol. Pyrogallol ---	$C_6H_3(OH)_3$ -----	1.443 } 4°-----	561.
" " -----	" -----	1.463 } -----	" "
Orthokresol -----	$C_6H_4.CH_3.OH$ -----	1.039, 23° -----	Gladstone. Bei. 9,
" -----	" -----	1.0578, 0°, 1. }	249.
" -----	" -----	1.0053, 65°.6 }	Pinette. A. C. P.
" -----	" -----	.8867, 190°.8 }	243, 32.
Metakresol -----	" -----	1.0330, 19° -----	Gladstone. Bei. 9,
" -----	" -----	1.0498, 0° -- }	249.
" -----	" -----	.8744, 202°.8 }	Pinette. A. C. P.
Parakresol. ?-----	" -----	1.033, 23° -----	243, 32.
" -----	" -----	1.0522, 0°, 1. }	v. Rad. J. 22, 448.
" -----	" -----	.9962, 65°.6 }	Pinette. A. C. P. 243, 32.
" -----	" -----	.8728, 201°.8 }	
Ethylphenol -----	$C_6H_4.C_2H_5.OH$ -----	1.049, 14° -----	
Orthopropylphenol -----	$C_6H_4.C_3H_7.OH$ -----	1.015, 0° -----	Auer. Ber. 17, 669.
" -----	" -----	.9370, 100° }	Spica. Ber. 12, 295.
Parapropylphenol -----	" -----	1.0091, 0° -- }	
" -----	" -----	.9324, 100° }	
Orthoisopropylphenol -----	" -----	1.01243, 0° }	Fileti. G. C. I. 16, 113.
" -----	" -----	.92765, 100° }	
Xylenol. 1.3.4 -----	$C_6H_3.CH_3.CH_3.OH$ -----	1.036, 0° }	
" " -----	" -----	.9700, 81° } --	Wurtz. J. 21, 460.
" " -----	" -----	1.0362, 0° -----	Jacobsen. Ber. 11,
" ?-----	" -----	1.0233, 23° -----	24.
" ?-----	" -----	.9709, 81° -----	Wroblevsky. J. 21,
" 1.3. ?-----	" -----	1.0366, 0° -- }	459.
" -----	" -----	1.0242, 15°.5 }	Wurtz. J. 21, 460.
" -----	" -----	1.0129, 30° }	Lako. J. 1876, 454.
" -----	" -----	1.0020, 45° }	
" -----	" -----	.9903, 59° -- }	
" -----	" -----	.9673, 100° }	
Phloretol -----	$C_8H_{10}O$ -----	1.0374, 12° -----	
Isopropylkresol -----	$C_6H_3.C_3H_7.CH_3.OH$ -----	1.00122, 0° }	
" -----	" -----	.91971, 100° }	Hlasiwetz. J. 10, 329.
Propylkresol. Carvacrol -	" -----	.98558, 15° -----	Spica. J. C. S. 44,
" " -----	" -----	.981, 15° -----	460.
" Thymol -----	" -----	1.0285, s.-----	Jacobsen. Ber. 11,
" " -----	" -----	1.01068, 0° -----	1060.
" " -----	" -----	1.009136, 0° }	Jahns. Ber. 15, 817.
" " -----	" -----	.92424, 100° }	Stenhouse. J. 9, 624.
			Two preparations.
			Pisati and Pater-
			no. Ber. 8, 71.

NAME.	FORMULA.	SP. GRAVITY	AUTHORITY.
Propylkresol. Thymol	$C_6H_3 \cdot C_3H_7 \cdot CH_3 \cdot OH$	1.069	Rüdorff. Ber. 12, 252.
"	"	1.0101, 4°	Schiff. Ber. 13, 1408.
"	"	.939, 25° .5	Haines. J. 9, 623.
"	"	.988, 0°	Febve. Ber. 14, 1720.
"	"	1.029	Schröder. Ber. 14, 2516.
"	"	1.034	
"	"	.96895, 24° .4	Nasini and Bernheimer. G. C. I. 15, 50.
"	"	.92838, 77° .3	
"	"	.9499, 49° .3	Schiff. A. C. P. 223, 247.
"	"	.9941, 0°, 1.	Pinette. A. C. P. 243, 32.
"	"	.9401, 16° .5	
"	"	.7923, 231° .8	
Orthobutenylphenol	$C_6H_4 \cdot C_4H_7 \cdot OH$	1.0171	Perkin. C. N. 39, 39.
Guaiacol. 1.2	$C_6H_4 \cdot OCH_3 \cdot OH$	1.1171, 13°	Hlasiwetz. A. C. P. 106, 366.
"	"	1.119, 22°	Sobrero.
"	"	1.125, 16°	Völckel. J. 7, 610.
"	"	1.119, 17° .5	Gorup-Besanez.
Kreosol. 1.3.4	$C_6H_3 \cdot OCH_3 \cdot CH_3 \cdot OH$	1.0894, 13°	Hlasiwetz. A. C. P. 106, 354.
Orcin	$C_6H_3 \cdot CH_3 \cdot (OH)_2 \cdot H_2O$	1.283	Schröder. Ber. 12, 1611.
"	"	1.296 } 4°	

22d. Aromatic Alcohols.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Benzyl alcohol	$C_6H_5 \cdot CH_2OH$	1.059	Cannizzaro. J. 7, 585.
"	"	1.0628, 0°	Kopp. A. C. P. 94, 257.
"	"	1.0507, 15° .4	
"	"	1.0465, 19°	Kraut. A. C. P. 152, 134.
"	"	1.0429, 20°	Brühl. Bei. 4, 781.
"	"	1.0412, 22°	Gladstone. Bei. 9, 249.
Benzylcarbinol	$C_6H_5 \cdot CH_2 \cdot CH_2OH$	1.0337, 21°	Radziszewski. Ber. 9, 373.
Phenylpropyl alcohol	$C_6H_5 \cdot CH_2 \cdot CH_2 \cdot CH_2OH$	1.008, 18°	Rügheimer. A. C. P. 172, 126.
"	"	1.0079, 20°	Brühl. Bei. 4, 781.
Orthoxylyl alcohol	$C_6H_4 \cdot CH_3 \cdot CH_2OH$	1.08, s.	Colson. Ann. (6), 6, 86.
"	"	1.023, 40°, 1.	
Metaxylyl alcohol	"	.9157, 17°	Radziszewski and Wispek. Ber. 15, 1747.
"	"	1.036, 0°	Colson. Ann. (6), 6, 86.
Ethylphenylcarbinol	$C_6H_4 \cdot CHOH \cdot CH_3$	1.016, 0°	Wagner. Ber. 17, ref. 317.
"	"	.994, 23°	
Cymyl alcohol. 1.4	$C_6H_4 \cdot C_3H_7 \cdot CH_2OH$	.9775, 15°	Kraut. A. C. P. 192, 224.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Saligenin -----	$C_6H_4.OH.CH_2OH$	1.1613, 25° ---	Beilstein and Seelheim. J. 14, 765.
Methylsaligenin. 1.2 -----	$C_6H_4.OCH_3.CH_2OH$	1.1200, 23° } 1.0532, 100° }	{ Cannizzaro and Koerner. B. S. C. 18, 132.
" " -----	"	1.1093, 26° } 1.0507, 100° }	
Anisic alcohol. 1.4 -----	"	1.013 -----	" "
Acetophenone alcohol -----	$C_8H_8O_2$ -----	1.0402, 24°.8--	Emmerling and Engler. Ber. 6, 1006.
Cinnamic alcohol -----	$C_9H_{10}O$ -----	1.04017, 24°.8--	Nasini. Bei. 9, 331.
" " -----	"	1.03024, 36°.1--	{ Nasini and Bernheimer. G. C. I. 15, 50.
" " -----	"	1.0027, 77°.3--	
" " -----	"	1.0318, 13° ---	Gladstone. Bei. 9, 249.
" " -----	"	1.0440, 20° } 1.0354, 31° }	Brühl. A. C. P. 235, 1.
" " -----	"	1.0346, 32° }	
" " -----	"	1.0338, 33° }	
Ethylphenylacetylene alcohol.	$C_{10}H_{12}O$ -----	.985, 19° -----	Morgan. J. C. S. (3), 1, 163.
Orthoxylene glycol -----	$C_6H_4(CH_2OH)_2$ --	1.138, 75° -----	Colson. Ann. (6), 6, 86.
Metaxylene glycol -----	"	1.161, 18°, sur- fused.	{ " "
" " -----	"	1.135, 53° -----	
Paraxylene glycol -----	"	1.094, 135° -----	" "
Mesitylene glycol -----	$C_6H_3.CH_3.(CH_2OH)_2$	1.23, 15° -----	Robinet and Colson. C. R. 96, 1863.

23d. Aromatic Oxides.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Phenyl ether -----	$C_6H_5.O.C_6H_5$ -----	1.0904 -----	Gladstone and Tribe. J. C. S. 41, 6.
" " -----	"	1.0744, 24° } 1.0712, 25° }	Gladstone. Bei. 9, 249.
" " -----	"	.991, 15° -----	
Phenylmethyloxi- Anisole.	$C_6H_5.O.CH_3$ -----	.991, 15° -----	Cahours. J. 2, 403.
" " " "	"	.8607 } 155° --	{ Schiff. G. C. I. 13, 177.
" " " "	"	.8608 }	
" " " "	"	.98784, 21°.8--	Nasini and Bernheimer. G. C. I. 15, 50.
" " " "	"	1.0110, 0° -- }	Pinette. A. C. P. 243, 32.
" " " "	"	.8604, 154°.3 }	
Phenylethyloxi- Phenol.	$C_6H_5.O.C_2H_5$ -----	.8196 } 171°.5 }	{ Schiff. G. C. I. 13, 177.
" " " "	"	.8198 }	
" " " "	"	.973, 15° -----	Remsen and Orndorff. A. C. J. 9, 393.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Phenylethyloxy. Phene- tol. " " "	$C_6H_5 \cdot O \cdot C_2H_5$ ----- " " "-----	.9822, 0° --- } .8169, 170°.3 }	Pinette. A.C.P. 243, 32.
Phenyl propyl oxide----- " " "-----	$C_6H_5 \cdot O \cdot C_3H_7$ ----- " " "-----	.968, 20° ----- .9639, 0° ----- } .7889, 190°.5 }	Cahours. Les Mon- des, 32, 280. Pinette. A.C.P. 243, 32.
Phenyl isopropyl oxide -- " " "-----	"----- "-----	.958, 0° -- } .947, 12°.5 }--	Silva. Z. C. 13, 250.
Phenyl butyl oxide----- " " "-----	$C_6H_5 \cdot O \cdot C_4H_9$ ----- "-----	.9500, 0° ----- } .7664, 210°.3 }	Pinette. A.C.P. 243, 32.
Phenyl isobutyl oxide----- " " "-----	"----- "-----	.9388, 16° -----	Riess. J. C. S. 24, 221.
Phenyl n. heptyl oxide--- " " "-----	$C_6H_5 \cdot O \cdot C_7H_{15}$ ----- "-----	.9319, 0° --- } .7075, 266°.8 }	Pinette. A.C.P. 243, 32.
Phenyl n. octyl oxide --- " " "-----	$C_6H_5 \cdot O \cdot C_8H_{17}$ ----- "-----	.9221, 0° --- } .6941, 282°.8 }	" "
Benzyl ether----- " " "-----	$C_7H_7 \cdot O \cdot C_7H_7$ ----- "-----	1.0359, 16° --- 1.0352, 16° ---	Lowe. J. C. S. 51, 701. Gladstone. Bei. 9, 249.
Orthokresyl methyl oxide- " " "-----	$C_7H_7 \cdot O \cdot CH_3$ ----- "-----	.9957, 0° --- } .8331, 171°.3 }	Pinette. A. C. P. 243, 32.
Metakresyl methyl oxide- " " "-----	"----- "-----	.9891, 0° --- } .8255, 177°.2 }	" "
Parakresyl methyl oxide- " " "-----	"----- "-----	.8236, 175°.5--- .9868, 0° --- }	Schiff. Bei. 9, 559. Pinette. A. C. P. 243, 32.
Orthokresyl ethyl oxide -- " " "-----	$C_7H_7 \cdot O \cdot C_2H_5$ ----- "-----	.9679, 0° --- } .7941, 184°.8 }	" "
Metakresyl ethyl oxide -- " " "-----	"----- "-----	.97123, 5° ----- .9650, 0° --- }	Staedel. Ber. 14, 898. Pinette. A. C. P. 243, 32.
Parakresyl ethyl oxide -- " " "-----	"----- "-----	.7888, 192° --- .8744, 0° ----- }	Fuchs. J. 22, 457. Pinette. A. C. P. 243, 32.
Orthokresyl propyl oxide - " " "-----	$C_7H_7 \cdot O \cdot C_3H_7$ ----- "-----	.7884, 189°.9 } .9517, 0° --- } .7675, 204°.1 }	" "
Metakresyl propyl oxide -- " " "-----	"----- "-----	.9484, 0° --- } .7628, 210°.6 }	" "
Parakresyl propyl oxide -- " " "-----	"----- "-----	.9497, 0° --- } .7635, 210°.4 }	" "
Orthokresyl butyl oxide -- " " "-----	$C_7H_7 \cdot O \cdot C_4H_9$ ----- "-----	.9437, 0° --- } .7493, 223° --- }	" "
Metakresyl butyl oxide -- " " "-----	"----- "-----	.9407, 0° --- } .7422, 229°.2 }	" "
Parakresyl butyl oxide -- " " "-----	"----- "-----	.9419, 0° --- } .7410, 229°.5 }	" "
Orthokresyl n. heptyloxyde " " "-----	$C_7H_7 \cdot O \cdot C_7H_{15}$ ----- "-----	.9243, 0° --- } .7016, 277°.5 }	" "
Metakresyl n. heptyloxyde " " "-----	"----- "-----	.9202, 0° --- } .6927, 283°.2 }	" "
Parakresyl n. heptyloxyde " " "-----	"----- "-----	.9228, 0° --- } .6905, 283°.3 }	" "
Orthokresyl n. octyl oxide " " "-----	$C_7H_7 \cdot O \cdot C_8H_{17}$ ----- "-----	.9231, 0° --- } .6905, 292°.9 }	" "
Metakresyl n. octyl oxide " " "-----	"----- "-----	.9194, 0° --- } .6818, 298°.9 }	" "

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Parakresyl n. octyl oxide	$C_7 H_7. O. C_8 H_{17}$ -----	.9199, 0° ----	Pinette. A. C. P. 243, 32.
“ “ “	“ “ “	.6808, 298° ----	
Ethyl phenetol -----	$C_6 H_4. C_2 H_5. O. C_2 H_5$ -----	.986, 14° -----	Auer. Ber. 17, 669.
Phloryl ethyl oxide -----	$C_8 H_9. O. C_2 H_5$ -----	.9323, 18° -----	Sigel. A. C. P. 170, 345.
Styrolyl ethyl oxide -----	“ “ “	.931, 21°.9 ----	Thorpe. J. 22, 412.
Orthopropylphenyl methyl oxide. }	$C_6 H_4. C_3 H_7. O. CH_3$ -----	.9694, 0° ----	Spica. Ber. 12, 295.
“ “ “	“ “ “	.9168, 100° ----	
Parapropylphenyl methyl oxide. “ “ “	“ “ “	.9636, 0° ----	“ “
“ “ “	“ “ “	.9125, 100° ----	
Isopropylphenyl methyl oxide.	“ “ “	.962, 0° -----	Paterno and Spica. Ber. 10, 84.
Isopropylphenyl ethyl oxide. “ “ “	$C_6 H_4. C_3 H_7. O. C_2 H_5$ -----	.94377, 0° --	Spica. J. C. S. 38, 167.
“ “ “	“ “ “	.86369, 100° --	
Orthoisopropylphenyl ethyl oxide. “ “ “	“ “ “	.94438, 0° --	Fileti. G. C. I. 16, 113.
“ “ “	“ “ “	.85913, 100° --	
Butyl anisol -----	$C_6 H_4. C_4 H_9. O. CH_3$ -----	.9368, 27° -----	Studer. Ber. 14, 2187.
Methyl thymol -----	$C_{10} H_{13}. O. C H_3$ -----	.941, 18° -----	Engelhardt and Lat- schinoff. J. 22, 466.
“ “ “	“ “ “	.953898, 0° --	} Two samples. Pi- sati and Paterno. Ber. 8, 71.
“ “ “	“ “ “	.869281, 100° --	
“ “ “	“ “ “	.954314, 0° --	
“ “ “	“ “ “	.870459, 100° --	
“ “ “	“ “ “	.9531, 0° --	
“ “ “	“ “ “	.7635, 216°.2	Pinette. A. C. P. 243, 32.
Ethyl thymol -----	$C_{10} H_{13}. O. C_2 H_5$ -----	.93866, 0° --	Spica. J. C. S. 44, 460.
“ “ “	“ “ “	.85758, 100° --	
“ “ “	“ “ “	.9334, 0° --	Pinette. A. C. P. 243, 32.
“ “ “	“ “ “	.7400, 226°.9	
Propyl thymol -----	$C_{10} H_{13}. O. C_3 H_7$ -----	.9276, 0° --	“ “
“ “ “	“ “ “	.7215, 243°	
Butyl thymol -----	$C_{10} H_{13}. O. C_4 H_9$ -----	.9230, 0° --	“ “
“ “ “	“ “ “	.7108, 258°.3	
Normal heptyl thymol -----	$C_{10} H_{13}. O. C_7 H_{15}$ -----	.9097, 0° --	“ “
“ “ “	“ “ “	.6712, 306°.7	
Normal octyl thymol -----	$C_{10} H_{13}. O. C_8 H_{17}$ -----	.9026, 0° --	“ “
“ “ “	“ “ “	.6608, 319°.8	
Metaxylyl ethyl oxide -----	$C_6 H_4. CH_3. CH_2. O. C_2 H_5.$	.9302, 17° -----	Radziszewski and Wispek. Ber. 15, 1746.
Paraxylyl ethyl oxide -----	“ “ “	.9304, 17° -----	Radziszewski and Wispek. Ber. 15, 1745.
Diphenylcarbyl ethyl oxide.	$(C_6 H_5)_2 CH. O. C_2 H_5$	1.029, 20° ----	Linnemann.
Benzyl anisol -----	$C_6 H_4. C_7 H_7. O. CH_3$ -----	1.073, 0° ----	Paterno. B. S. C. 18, 77.
“ “ “	“ “ “	.993, 100° --	
Phenylvinyl ethyl oxide -----	$C_{10} H_{12} O$ -----	.9812, 0° -----	Erlenmeyer. Ber. 14, 1868.
Orthovinylanisöl -----	$C_6 H_4. C_2 H_3. O. CH_3$ -----	1.0095, 15° } 1.000, 30° --	Perkin. J. C. S. 33, 211.
“ “ “	“ “ “	“ “ “	
Paravinylanisöl -----	“ “ “	1.002, 15° } .9956, 30° } --	“ “
“ “ “	“ “ “	“ “ “	
Orthoallylanisöl -----	$C_6 H_4. C_3 H_5. O. CH_3$ -----	.9972, 15° } .9884, 30° } --	“ “
“ “ “	“ “ “	“ “ “	
“ “ “	“ “ “	.9793, 45° } --	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Anethol. 1.4-----	$C_6H_4.C_3H_5.O.CH_3$ ----	.984, 20°-----	Landolph. C. R. 82, 227.
“ Natural.-----	“-----	.9858, 30°--	Perkin.
“ Artificial-----	“-----	.9852, 30°--	
“ “-----	“-----	.9761, 45°--	
“-----	“-----	.9887, 21°.3----	Schiff. A. C. P. 223, 247.
“-----	“-----	.99132, 14°.9--	Nasini and Bernheimer. G.C.I. 15, 50.
“-----	“-----	.98556, 21°.6--	
“-----	“-----	.97595, 34°.4--	
“-----	“-----	.94041, 77°.3--	
“-----	“-----	.9869, 21°--	Gladstone. J.C.S. 49, 623.
“ Artificial-----	“-----	.9870, 21°--	
Orthobutenylanisöl-----	$C_6H_4.C_4H_7.O.CH_3$ ----	.9817, 15°--	Perkin. J. C. S. 33, 211.
“-----	“-----	.9740, 30°--	
Parabutenylanisöl-----	“-----	.9733, 30°-----	“ “
Phenyl allyl oxide-----	$C_6H_5.O.C_3H_5$ -----	.9825, 17°.6----	Nasini. Bei. 9, 331.
Kresyl allyl oxide. 1.4-----	$C_7H_7.O.C_3H_5$ -----	.9869, 10°-----	“ “
Phenyl propargyl oxide-----	$C_6H_5.O.C_3H_3$ -----	1.246, 0°-----	Henry. Ber. 16, 1378.
Veratrol. 1.2-----	$C_6H_4(OCH_3)_2$ ----	1.086, 15°-----	Merck. J. 11, 256.
Dimethylresorcin. 1.3-----	“-----	1.075, 0°-----	Coninck. Ber. 13, 1992.
“-----	“-----	1.0803, 0°--	Schiff. Ber. 19, 560.
“-----	“-----	1.0317, 55°.8--	
“-----	“-----	1.0104, 79°.2--	
“-----	“-----	.9566, 135°.5--	
“-----	“-----	.8752, 215°--	
Methylene diphenate-----	$CH_2(OCH_5)_2$ ----	1.1136, 18°-----	Henry. Ann. (5), 30, 269.
“ “-----	“-----	1.092, 20°-----	Arnhold. A. C. P. 240, 192.
Methylene diorthokresylate.	$CH_2(OC_7H_7)_2$ ----	1.019, 50°, 1.--	“ “
Methylene dimetakresylate.	“-----	1.052, 50°, 1.--	“ “
Methylene diparakresylate	“-----	1.034, 50°, 1.--	“ “
Methylene dibenzylate-----	“-----	1.053, 20°-----	“ “
Methylene dithymylate-----	$CH_2(OC_{10}H_{13})_2$ ----	.979, 50°, 1.--	“ “
Ethylene diphenate-----	$C_2H_4(OC_6H_5)_2$ ----	1.018, 11°-----	Henry. Ber. 16, 1378.

24th. Aromatic Acids and their Paraffin Ethers.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Benzoic acid	$C_6 H_5. C O O H$	1.29, cryst.	Kopp.
"	"	1.201, 21°, s.	} Mendelejeff. J. 11, 274.
"	"	1.206, 25°.8, l.	
"	"	1.227, 27°, l.	
"	"	1.0838, 121°.4	Kopp. J. 8, 35.
"	"	1.337, sublimed	Rüdorff. Ber. 12, 251.
"	"	1.288	} Schröder. Ber. 12, 561.
"	"	1.291	
"	"	1.297	
"	"	1.0800, 121°.4	Schiff. A. C. P. 223, 247.
Methyl benzoate	$C_8 H_8 O_2$	1.10, 17°	Dumas and Peligot. Ann. (2), 58, 50.
"	"	1.1026, 0°	} Kopp. A. C. P. 94, 257.
"	"	1.0876, 16°.3	
"	"	1.0921, 12°.3	Mendelejeff. J. 13, 7.
"	"	1.0862, 20°	Brühl. Bei. 4, 782.
"	"	1.100, 10°	De Heen. Bei. 10, 313.
"	"	1.103, 15°	Stohmann, Rodatz, and Herzberg. J. P. C. (2), 36, 1.
Ethyl benzoate	$C_9 H_{10} O_2$	1.0539, 10°.5	Dumas and Boullay. P. A. 12, 430.
"	"	1.06, 18°	Deville. Ann. (3), 3, 188.
"	"	1.049, 14°	Delffs. J. 7, 26.
"	"	1.0657, 0°	} Kopp. A. C. P. 94, 257.
"	"	1.0556, 10°.5	
"	"	1.0517, 14°.1	Mendelejeff. J. 13, 7.
"	"	1.048, 20°	Naumann. Ber. 10, 2016.
"	"	1.0473, 20°	Brühl. Bei. 4, 782.
"	"	1.0502, 16°	Linnemann. A. C. P. 160, 195.
"	"	1.160, 10°	De Heen. Bei. 10, 313.
"	"	1.050, 15°	Stohmann, Rodatz, and Herzberg. J. P. C. (2), 36, 1.
Propyl benzoate	$C_{10} H_{12} O_2$	1.0316, 16°	Linnemann. A. C. P. 161, 29.
"	"	1.0248, 15°	Stohmann, Rodatz, and Herzberg. J. P. C. (2), 36, 1.
Isopropyl benzoate	"	1.054, 0°	} Silva. Z. C. 12, 637.
"	"	1.013, 25°	
Butyl benzoate	$C_{11} H_{14} O_2$	1.000, 20°	Linnemann. Ann. (4), 27, 268.
"	"	1.002, 10°	De Heen. Bei. 10, 313.
Isobutyl benzoate	"	1.0018, 15°	Stohmann, Rodatz, and Herzberg. J. P. C. (2), 36, 1.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Amyl benzoate-----	$C_{12}H_{16}O_2$ -----	1.0039, 0° --	Kopp. A. C. P. 94, 257.
" "-----	"-----	.9925, 14°.4 }	
" "-----	"-----	1.002, 10° ----	
" "-----	"-----	.9916, 15° ----	De Heen. Bei. 10, 313.
Hexyl benzoate-----	$C_{13}H_{18}O_2$ -----	.99846, 17° ---	Stohmann, Rodatz, and Herzberg. J. P. C. (2), 36, 1. Frentzel. Ber. 16, 745.
Salicylic acid-----	$C_6H_4.OH.CO_2H$. 1.2	1.443 -----	Rüdorff. Ber. 12, 251.
" "-----	"-----	1.482 } 4° -- {	Schröder. Ber. 12, 1611.
" "-----	"-----	1.485 } 4° -- {	
Metaoxybenzoic acid ----	" 1.3	1.473, 4° ----	
Paraoxybenzoic acid-----	" 1.4	1.460 } 4° ----	" "
" "-----	"-----	1.476 } 4° ----	
Methyl salicylate, oil of Betula lenta.	$C_8H_8O_3$ -----	1.180, 15° ----	Pettigrew. Am. J. P. 55, 385.
Propyl salicylate-----	$C_{10}H_{12}O_3$ -----	1.021, 21° ----	Cahours. Les Mon- des, 32, 280.
Methylsalicylic acid. 1.2--	$C_6H_4.OCH_3.CO_2H$	1.18, 10° ----	Cahours. Ann. (3), 10, 327.
" "-----	"-----	1.1845, 15° ----	Mendelejeff. J. 13, 7.
" "-----	"-----	1.1969, 0° --	Kopp. A. C. P. 94, 257.
" "-----	"-----	1.1819, 16° }	
" "-----	"-----	1.1801, 20° ----	Landolt. Bei. 7, 847
Anisic acid. 1.4-----	"-----	1.364 }	Schröder. Ber. 12, 1611.
" "-----	"-----	1.376 } 4° -- {	
" "-----	"-----	1.385 }	
Ethylsalicylic acid. 1.2 --	$C_6H_4.OC_2H_5.CO_2H$	1.097 -----	Baly. J. C. S. 2, 28.
" "-----	"-----	1.1843, 10° ----	Delffs. J. 7, 26.
Ethyl ethylsalicylate-----	$C_{11}H_{14}O_3$ -----	1.1005 -----	Göttig. Ber. 9, 1473.
Ethyl ethylmetaoxyben- zoate. "-----	"-----	1.0875, 0° -- }	Heintz. A.C.P. 153, 332.
" "-----	"-----	1.0725, 20° }	
Methyl isopropylsalicylate	"-----	1.062, 20° ----	Kraut. J. 22, 566.
Protocatechuic acid-----	$C_6H_3(OH)_2.CO_2H$	1.541 } 4° -- {	Schröder. Ber. 12, 1611.
" "-----	"-----	1.542 }	
Gallic acid-----	$C_6H_2(OH)_3.CO_2H$	1.685 } 4° ----	" "
" "-----	"-----	1.703 }	
Phenylacetic, or alpha- toluic acid. "-----	$C_6H_5.CH_2.CO_2H$	1.3, solid --- }	Möller and Strecker. J. 12, 299.
" "-----	"-----	1.0778, 83° }	
" "-----	"-----	1.0334, 135° }	
" "-----	"-----	1.220 } 4° -- {	Schröder. Ber. 12, 1611.
" "-----	"-----	1.236 }	
" "-----	"-----	1.0847, 76°.4--	Schiff. A. C. P. 223, 247.
Methyl phenylacetate-----	$C_9H_{10}O_2$ -----	1.044, 16° ----	Radziszewski. Z. C. 12, 358.
Ethyl phenylacetate-----	$C_{10}H_{12}O_2$ -----	1.031 -----	" "
Propyl phenylacetate-----	$C_{11}H_{14}O_2$ -----	1.0142, 18° ----	Hodgkinson. J. C. S. 37, 483.
Phenylpropionic, or hy- drocinnamic acid.	$C_6H_5.C_2H_4.CO_2H$	1.07115, 48°.7--	Weger. A. C. P. 221, 61.
" "-----	"-----	.8780, 279°.8--	
Methyl phenylpropionate	$C_{10}H_{12}O_2$ -----	1.0455, 0° -- }	Erlenmeyer. J. 19, 366.
" "-----	"-----	1.018, 49° -- }	
" "-----	"-----	1.0473, 0° ----	Weger. A. C. P. 221, 61.
" "-----	"-----	.83824, 236°.6--	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethyl phenylpropionate	$C_{11}H_{14}O_2$	1.0343, 0°	Erlenmeyer. J. 19, 367. Brühl. Bei. 4, 781. Weger. A. C. P. 221, 61.
" "	"	.9925, 49°	
" "	"	1.0147, 20	
" "	"	1.0348, 0°	
" "	"	.80182, 248°.1	" "
Propyl phenylpropionate	$C_{12}H_{16}O_2$	1.0152, 0°	
" "	"	.77886, 262°.1	
Amyl phenylpropionate	$C_{14}H_{20}O_2$	.9807, 0°	Erlenmeyer. J. 19, 367.
" "	"	.9520, 49°	
Methyl oxyphenylacetate	$C_9H_{10}O_3$	1.15, 17°.5	Fritzsche. Ber. 12, 2178.
Ethyl oxyphenylacetate	$C_{10}H_{12}O_3$	1.104, 17°.5	" "
Ethyl oxyphenylpropionate.	$C_{11}H_{14}O_3$	1.360, 17°.5	SaARBACH. J. P. C. (2), 21, 156.
Phthalic acid	$C_6H_4(COOH)_2$	1.585	Schröder. Ber. 13, 1070.
" "	"	1.593	
Methyl phthalate	$C_{10}H_{10}O_4$	1.2001	Three preparations. Schmalzigaug. Inaug. Diss. Erlangen, 1883. See also Graebe, Ber. 16, 861.
" "	"	1.2022	
" "	"	1.2101	
" "	"	1.1958	
" "	"	1.1974	
" "	"	1.2058	
" "	"	1.1953	
" "	"	1.1938	
" "	"	1.2031	
Ethyl phthalate	$C_{12}H_{14}O_4$	1.1316	Two preparations. Schmalzigaug. Inaug. Diss. Erlangen, 1883.
" "	"	1.1321	
" "	"	1.1294	
" "	"	1.1295	
Orthophenyleneglyoxylic acid.	$C_6H_4.CO.H.CO.H$	1.404	Colson and Gautier. C. R. 102, 689.
Cinnamic, or phenylacrylic acid.	$C_6H_5.CH.CH.CO.H$	1.245	E. Kopp. J. P. C. 37, 280.
" "	"	1.195	Schabus. J. 3, 392.
" "	"	1.246	Schröder. Ber. 12, 1611.
" "	"	1.249	
" "	"	1.0565, 133°	Weger. A. C. P. 221, 61.
" "	"	.90974, 300°	
Methyl cinnamate	$C_{10}H_{10}O_2$	1.106	E. Kopp. C. R. 21, 1376.
" "	"	1.0415, 36°	Weger. A. C. P. 221, 61.
" "	"	.85888, 259°.6	
Ethyl cinnamate	$C_{11}H_{12}O_2$	1.126, 0°	E. Kopp. C. R. 21, 1376.
" "	"	1.13	Marchand. A. C. P. 32, 269.
" "	"	1.0656, 0°	H. Kopp. A. C. P. 95, 307.
" "	"	1.0498, 20°.2	
" "	"	1.0653	Weger. A.C.P. 221, 61.
" "	"	1.0658	
" "	"	1.0662	
" "	"	.82143, 271°	
" "	"	1.0490, 20°	Brühl. A.C.P. 235, 1.
Propyl cinnamate	$C_{12}H_{14}O_2$	1.0465	Kahlbaum. Ber. 16, 1491.
" "	"	1.0435, 0°	Weger. A.C.P. 221, 61.
" "	"	.7917, 285°.1	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl α methylorthoxy- phenylacrylate. }	$C_{11} H_{11} O_3$ -----	1.1404, 15° } 1.1277, 30° }	Perkin. J. C. S. 39, 409.
" " -----	" -----	1.1465, 8°.5 -----	Gladstone. Bei. 9, 249.
Methyl β methylorthoxy- phenylacrylate. }	" -----	1.1486, 15° } 1.1362, 30° }	Perkin. J. C. S. 39, 409.
" " -----	" -----	1.1556, 9°.5 -----	Gladstone. Bei. 9, 249.
Ethyl α ethylorthoxy- phenylacrylate. }	$C_{13} H_{16} O_3$ -----	1.084, 15° -- } 1.074, 30° -- }	Perkin. J. C. S. 39, 409.
Ethyl β ethylorthoxy- phenylacrylate. }	" -----	1.090, 15° -----	" "
" " -----	" -----	1.090, 10° -----	Gladstone. Bei. 9, 249.
Methyl α methylorthoxy- phenylcrotonate. }	$C_{12} H_{14} O_3$ -----	1.1112, 15° } 1.1061, 30° }	Perkin. J. C. S. 39, 409.
Methyl β methylorthoxy- phenylcrotonate. }	" -----	1.1279, 15° } 1.1136, 30° }	" "
Methyl α methylorthoxy- phenylangelate. }	$C_{13} H_{16} O_3$ -----	1.1044, 15° } 1.0882, 30° }	" "
Methyl β methylorthoxy- phenylangelate. }	" -----	1.1100, 15° } 1.1008, 30° }	" "
Mandelic acid -----	$C_6 H_5 \cdot CHOH \cdot COOH$	1.355 } 1.367 } 4° -- }	Schröder. Ber. 12, 1611.
" " -----	" -----	" -----	" "
Cuminic acid -----	$C_6 H_4 \cdot C_3 H_7 \cdot COOH$	1.156 } 1.169 } 4° -----	" "
" " -----	" -----	" -----	" "
Quinic acid -----	$C_7 H_{12} O_6$ -----	1.637, 8°.5 -----	Watts' Dictionary.
Ethyl veratrate -----	$C_{11} H_{14} O_4$ -----	1.141, 18° -----	Will. A. C. P. 37, 198.
Ethyl phenylglyoxylate -----	$C_{10} H_{10} O_3$ -----	1.121, 17°.5 -----	Claisen. Ber. 12, 629.
Ethyl phenylacetacetate -----	$C_{12} H_{14} O_3$ -----	1.0861, 16° -----	Hodgkinson. J. C. S. 37, 481.
Ethyl benzylacetacetate -----	$C_{13} H_{16} O_3$ -----	1.036, 15°.5 -----	Conrad. Ber. 11, 1056.
Ethyl methylbenzylacet- acetate. -----	$C_{14} H_{18} O_3$ -----	1.046, 23° -----	" "
Ethyl benzylmalonate -----	$C_{14} H_{18} O_4$ -----	1.077, 15° -----	Conrad and Bischoff. A. C. P. 204, 203.
Ethyl benzylmethylmalonate.	$C_{15} H_{20} O_4$ -----	1.064, 19° -----	Conrad and Bischoff. Ber. 13, 595.
Ethyl benzylidenemalonate.	$C_{14} H_{16} O_4$ -----	1.1105, 15° -----	Claisen and Crismer. A. C. P. 218, 132.
Ethyl benzylacetosuccinate.	$C_{17} H_{22} O_5$ -----	1.088, 15° -----	Conrad. Ber. 11, 1058.
Monomethyl propylpy- rogallate. Picamar. }	$C_{10} H_{14} O_3$ -----	1.10 -----	Reichenbach.
" " -----	" -----	1.10288, 15° -----	Pastrovich. M. C. 4, 183.

25th. Ethers of Aromatic Radicles.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Phenyl acetate -----	$C_8 H_8 O_2$ -----	1.074 -----	Boughton. J. 18, 530.
Kresyl acetate -----	$C_9 H_{10} O_2$ -----	1.0499, 23° -----	Gladstone. Bei. 9, 249.
Benzyl acetate -----	" -----	1.057, 16°.5 -----	Conrad and Hodgkinson. A. C. P. 193, 312.
" " -----	" -----	1.0400, 21° -----	} Gladstone. Bei. 9, 249.
" " -----	" -----	1.03814, 22°.5 -----	
Paraxylyl acetate -----	$C_{10} H_{12} O_2$ -----	1.0264, 15° -----	Jacobsen. Ber. 11, 28.
Ethylphenyl acetate -----	" -----	1.0286 -----	Radziszewski. Ber. 9, 873.
" " -----	" -----	1.0507, 22°.5 -----	Gladstone. Bei. 9, 249.
Methylphenylcarbyl acetate.	" -----	1.05, 17° -----	Radziszewski. C. C. 5, 261.
Parapropylphenyl acetate.	$C_{11} H_{14} O_2$ -----	1.029, 0° -----	} Spica. Ber. 12, 295.
" " -----	" -----	.9425, 100° -----	
Orthoisopropylphenyl acetate.	" -----	1.02714, 0° -----	} Fileti. G. C. I. 16, 113.
" " -----	" -----	.93818, 100° -----	
Paraisopropylphenyl acetate.	" -----	1.026, 0° -----	Paterno and Spica. Ber. 10, 84.
Mesityl acetate -----	" -----	1.0903, 16°.5 -----	Wispek. Ber. 16, 1577.
Thymyl acetate -----	$C_{12} H_{16} O_2$ -----	1.009, 0° -----	} Two preparations. Paterno. J. C. S. (2), 13, 638.
" " -----	" -----	.924, 100° -----	
" " -----	" -----	1.010, 0° -----	
Butylphenyl acetate -----	" -----	.999, 24° -----	Studer. Ber. 14, 2187.
Diphenylcarbyl acetate -----	$C_{15} H_{14} O_2$ -----	1.49, 22° ? -----	Linnemann. A. C. P. 133, 20.
Benzyl propionate -----	$C_{10} H_{12} O_2$ -----	1.036, 16°.5 -----	Conrad and Hodgkinson. A. C. P. 193, 312.
Benzyl butyrate -----	$C_{11} H_{14} O_2$ -----	1.016, 16° -----	" "
Benzyl isobutyrate -----	" -----	1.016, 18° -----	Hodgkinson. A. C. P. 193, 320.
" " -----	" -----	1.0058, 23° -----	Gladstone. Bei. 9, 249.
Isomer of benzyl isobutyrate.	" -----	1.0228, 22° -----	" "
Benzyl phenylacetate -----	$C_{15} H_{14} O_2$ -----	1.101 -----	Slawik. J. C. S. (2), 13, 59.
Benzyl benzylacetate -----	$C_{16} H_{16} O_2$ -----	1.074, 21° -----	Conrad and Hodgkinson. A. C. P. 193, 312.
Benzyl benzylpropionate.	$C_{17} H_{18} O_2$ -----	1.046, 16°.5 -----	" "
Benzyl benzylbutyrate.	$C_{18} H_{20} O_2$ -----	1.027, 17°.5 -----	" "
Benzyl benzylisobutyrate.	" -----	1.028, 18° -----	" "
Benzyl dimethylbenzylacetate.	" -----	1.0285, 18° -----	Hodgkinson. J. C. S. 33, 495.
Benzyl benzoate -----	$C_{14} H_{12} O_2$ -----	1.114, 18°.5 -----	Kraut. A. C. P. 152, 159.
" " -----	" -----	1.1224, 19°, 1. -----	Claisen. Ber. 20, 646.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Benzyl cinnamate -----	$C_{16} H_{14} O_2$ -----	1.098, 14° -----	Scharling. J. 9, 630.
" " -----	" -----	1.1145, 16° -----	Busse. Ber. 9, 831.
Cinnamic acetate -----	$C_{11} H_{12} O_2$ -----	.9416, 22° -----	Gladstone. Bei. 9, 249.
Mesitylene diacetate -----	$C_{13} H_{16} O_4$ -----	1.12, 20° -----	Robinet and Colson. C. R. 96, 1863.
Ethyl phenyl carbonate --	$C_9 H_{10} O_3$ -----	1.117, 0° -----	Fatianoff. J. 17, 477.
" " " -----	" -----	1.1134, 0° -----	Pawlewski. Ber. 17, 1205.

26th. Aromatic Aldehydes.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Benzaldehyde. Almond oil.	$C_6 H_5. C O H$ -----	1.075 -----	Chardin-Hardan-court.
" -----	" -----	1.038, 15° -----	Guckelberger. J. 1. 850.
" -----	" -----	1.043 -----	Wöhler and Liebig.
" -----	" -----	1.0636, 0° --	Kopp. A. C. P. 94, 257.
" -----	" -----	1.0499, 14°.6 }	
" -----	" -----	1.0504 -----	Mendelejeff. J. 13, 7.
" -----	" -----	1.067 -----	Lippmann and Hawliczek. Ber. 9, 1461.
" -----	" -----	1.0471 }	Landolt.
" -----	" -----	1.0474 }	
" -----	" -----	1.0455, 20° --	Brühl. Bei. 4, 782.
Toluic aldehyde -----	$C_6 H_4 C H_3. C O H$ -----	1.037, 0° --	Gundelach. B.S. C. 26, 45.
" " -----	" -----	1.024, 22° --	
Phenylacetic aldehyde --	" -----	1.085 -----	Radziszewski. Ber. 9, 372.
Cuminic aldehyde. Cuminol.	$C_6 H_4. C_3 H_7. C O H$ -----	.9832, 0° --	Kopp. A. C. P. 94, 257.
" " -----	" -----	.9727, 13°.4 }	
" " -----	" -----	.9751, 15° -----	Mendelejeff. J. 13, 7.
" " -----	" -----	.9775, 20° -----	Gladstone. Bei. 9, 249.
Paratolylpropyl aldehyde	$C_6 H_4. CH_3. CH_2. CH_2. C O H$ -----	.9941, 13° -----	v. Richter and Schüchner. Ber. 17, 1931.
Salicylic aldehyde, or salicylol.	$C_6 H_4. O H. C O H$ -----	1.1731, 13°.3 --	Piria. A. C. P. 29, 300.
" " -----	" -----	1.1671, 20° -----	Landolt. Bei. 7, 847.
Anisic aldehyde -----	$C_6 H_4. O C H_3. C O H$ -----	1.09, 20° -----	Cahours. Ann. (3), 14, 484.
" " -----	" -----	1.1228, 18° -----	Rossel. Z. C. 12, 561.
Cinnamic aldehyde -----	$C_9 H_8 O$ -----	1.0497, 20° -----	Brühl. A. C. P. 235, 1.

27th. Aromatic Ketones.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl phenyl ketone ---	$C_6H_5.CO.CH_3$ ---	1.032, 15° ---	Friedel. J. 10, 270.
Methyl benzyl ketone ----	$C_7H_7.CO.CH_3$ ----	1.010, 13° ----	Radziszewski. Ber. 3, 199.
Methyl tolyl ketone -----	" -----	.9891, 22° -----	Essner and Gossin. Ber. 17, ref. 429.
Propyl phenyl ketone ----	$C_6H_5.CO.C_3H_7$ ----	.990, 15° ----	Schmidt and Fieberg. J. C. S. (2), 12, 75.
" " " ----	" ----	.992, 15° ----	Popoff. Ber. 6, 560.
" " " ----	" ----	.9949, 15° ----	Einhorn. In. Diss. Tübingen, 1880.
Isopropyl phenyl ketone -	" -	.994, 12° } ----	" "
" " " -	" -	.972, 30° }	
" " " -	" -	.934, 60° }	
Methyl xylyl ketone ----	$C_8H_9.CO.CH_3$ ----	.9962, 19° ----	Claus and Wollner. Ber. 18, 1856.
Isobutyl phenyl ketone --	$C_6H_5.CO.C_4H_9$ --	.993, 17°.5 ----	Popoff. A.C.P. 162, 151.
Tolyl phenyl ketone ----	$C_6H_5.CO.C_7H_7$ ----	1.088, 17°.5 ----	Senff. A. C. P. 220, 252.
Acetocinnamone -----	$C_8H_7.CO.CH_3$ -----	1.008 -----	Engler and Leist. B. S. C. 20, 204.
Propionylacetophenone --	$C_{11}H_{12}O_2$ -----	1.081, 15° ----	Stylos. Ber. 20, 2181.
Butyrylacetophenone ----	$C_{12}H_{14}O_2$ -----	1.061, 15° ----	" "

28th. Camphors, Essential Oils, Etc.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Laurel camphor -----	$C_{10}H_{16}O$ -----	.986 } -----	Watts' Dictionary.
" " -----	" -----	.996 }	
Myristicol -----	" -----	.9466, 20° -----	Gladstone. J. C. S. (2), 10, 1.
Absinthol -----	" -----	.973, 24° -----	Leblanc. A. C. P. 56, 357.
" -----	" -----	.9267, 20° -----	Gladstone. J. C. S. (2), 10, 1.
" -----	" -----	.9128, 22° -----	Gladstone. Bei. 9, 249.
Citronellol -----	" -----	.8742 } 20° -----	{ Two samples Gladstone. J. C. S. (2), 10, 1.
" -----	" -----	.875 }	
From oil of coriander ----	" -----	.8970 -----	Grosser. Ber. 14, 2505.
Ericinol -----	" -----	.874, 20° -----	Frohde. J. P. C. 82, 186.
Oil of Mentha pulegium --	" -----	.9271 } -----	Watts' Dictionary.
" " " --	" -----	.9390 }	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Oil of Pulegium micranthum.	$C_{10}H_{16}O$	.932, 17°	Butlerow. J. 7, 595.
From oil of tansy	"	.918, 4°	Bruylants. Ber. 11, 451.
Thujol	"	.924, 15°	Jahns. Ber. 16, 2930.
Cajeputol	$C_{10}H_{18}O$	.9160, 20°	Gladstone. J. C. S. (2), 10, 1.
"	"	.8900, 21°.5	" "
Cajeputene hydrate	"	.903, 17°	Schmidl. J. 13, 480.
"	"	.9160, 20°	Kanonnikoff. Bei. 7, 592.
Oil of coriander	"	.871, 14°	Kawalier. J. 5, 624.
"	"	.8719, 15°	Grosser. Ber. 14, 2486.
Cyneol	"	.92067, 16°	Wallach and Brass. A. C. P. 225, 291.
"	"	.9267, 20°	Wallach. A. C. P. 245, 195.
Oil of eucalyptus oleosa	"	.9075, 20°	Gladstone. J. C. S. (2), 10, 1.
Geraniol	"	.8851, 15°	} Jacobsen. Z. C. 14, 171.
"	"	.8813, 21°	
Oil of Licari kanali	"	.868, 15°	Morin. J. C. S. 40, 738.
Oil of Melaleuca ericifolia	"	.8960, 20°	Gladstone. J. C. S. (2), 10, 1.
Oil of Melaleuca linarifolia	"	.8985, 20°	" "
From menthol	"	.9032	Moriya. C. N. 42, 268.
Menthone	"	.9126, 0°	} Atkinson and Yoshida. J. C. S. 41, 295.
"	"	.9048, 10°	
"	"	.8972, 20°	
"	"	.8819, 40°	
"	"	.8665, 60°	
"	"	.8511, 80°	
"	"	.8355, 100°	
Ngai camphor	"	1.02	Plowman. J. C. S. (2), 12, 582.
From Osmitopsis asteriscoides.	"	.921	Gorup-Besanez. J. 7, 596.
Salviol	"	.934, 15°	Sigiura and Muir. J. C. S. 33, 295.
"	"	.938, 15°	Muir. J. C. S. 37, 13.
Terpane	"	.935, 0°	Bouchardat and Voiry. C. R. 106, 664.
Terpilenol	"	.961, 0°	{ Bouchardat and Lafont. B. S. C. 45, 295.
"	"	.950, 15°	
"	"	.9533, 0°	Lafont. B. S. C. 49, 323.
Terpinol*	"	.952, 0°	Bouchardat and Voiry. B. S. C. 47, 870.
"	"	.9296, 10°	Gladstone. J. C. S. 49, 623.

* List's terpinol (J. 1, 726) is now known to be a mixture.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Terpinol -----	$C_{10}H_{18}O$ -----	.9357, 20° -----	Wallach. A. C. P. 245, 196.
Turpentine hydrate -----	" -----	.9274, 16° -----	Tilden. C. N. 37, 166.
" " -----	" -----	.9339, 0° -----	Flawitzky. Ber. 12, 2355.
" " -----	" -----	.9201, 18° -----	Renard. Ber. 13, 932.
" " -----	" -----	.9511, 10° -----	Kanonnikoff. Bei. 7, 592.
" " -----	" -----	.9188 -----	Flawitzky. Ber. 20, 1959.
" " -----	" -----	.9335, 0° -----	" " -----
" " -----	" -----	.9189, 19°.5 -----	" " -----
From wormseed oil -----	" -----	.9275, 16° -----	" " -----
" " " " -----	" -----	.8981, 50° -----	" " -----
" " " " -----	" -----	.8553, 100° -----	" " -----
Menthol -----	$C_{10}H_{20}O$ -----	.9394 } 20° -----	{ Two samples. Gladstone. J. C. S. (2), 10, 1.
" -----	" -----	.9515 } -----	{ -----
" -----	" -----	.89, 15° -----	Moriya. C. N. 42, 268.
" -----	" -----	.8786, 20° -----	Kanonnikoff. Bei. 7, 592.
Ethyl camphor -----	$C_{12}H_{20}O$ -----	.946, 22° -----	Baubigny. J. 19, 624.
Eucalyptol -----	" -----	.905, 8° -----	Cloëz. Z. C. 12, 411.
" -----	" -----	.9173, 15° -----	Poehl. J. R. C. 5, 538.
From wormseed oil -----	" -----	.919, 20° -----	Völckel. J. 6, 513.
Amyl camphor -----	$C_{15}H_{26}O$ -----	.919, 15° -----	Baubigny.
Acetyl camphor -----	$C_{12}H_{18}O_2$ -----	.986, 20° -----	Baubigny. J. 19, 624.
Methyl borneol -----	$C_{11}H_{20}O$ -----	.933, 15° -----	Baubigny.
Ethyl borneol -----	$C_{12}H_{22}O$ -----	.916, 23° -----	"
From Achillea ageratum -----	" -----	.849, 20° -----	De Luca. J. C. S. 31, 326.
From Angostura bark -----	$C_{13}H_{24}O$ -----	.934 -----	Herzog. J. 11, 444.
Patchouli camphor -----	$C_{15}H_{28}O$ -----	1.051, 4°.5 -----	Gal. Z. C. 12, 220.
Oil of ginger -----	$C_{80}H_{138}O_5$ (?) -----	.893 -----	Papousek. J. 5, 624.
Camphorogenol -----	$C_{10}H_{18}O_2$ -----	.9794, 20° -----	Yoshida. J. C. S. 47, 779.
Terpilene formate -----	$C_{11}H_{18}O_2$ -----	.9986, 0° -----	{ Two samples. Lafont. B. S. C. 49, 323.
" " -----	" -----	.9989 -----	{ -----
Terpilene acetate -----	$C_{12}H_{20}O_2$ -----	.9827, 0° -----	Bouchardat and Lafont. C. R. 102, 318.
Terebenthene acetate -----	" -----	.9820, 0° -----	" " -----
Terebene acetate -----	" -----	.977, 0° -----	Bouchardat and Lafont. C. R. 102, 171.
Camphene acetate -----	" -----	1.002, 0° -----	Lafont. C. R. 104, 1718.
Camphoric acid -----	$C_{10}H_{16}O_4$ -----	1.191 -----	{ Schröder. Ber. 13, 1070.
" " -----	" -----	1.195 -----	{ -----
Ethylcamphoric acid -----	$C_{12}H_{20}O_4$ -----	1.095, 20°.5 -----	Malaguti. Ann. (2), 64, 164.
Ethyl camphorate -----	$C_{14}H_{24}O_4$ -----	1.029, 16° -----	Malaguti. A. C. P. 22, 48.
" " -----	" -----	1.072, 22° -----	{ Dehmel. J. R. C. 4, 321.
" " -----	" -----	1.070, 25° -----	{ -----
Propyl camphorate -----	$C_{16}H_{28}O_4$ -----	1.058, 24° -----	" " -----
Ethyl paracamphorate -----	$C_{14}H_{24}O_4$ -----	1.03, 15° -----	Chautard. J. 16, 395.
Camphoric anhydride -----	$C_{10}H_{14}O_3$ -----	1.194, 20°.5 -----	Malaguti. Ann. (2), 64, 160.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethyl camphocarbonate	$C_{13}H_{20}O_3$	1.052, 15°	Roser. Ber. 18, 3112.
Camphrene	$C_8H_{12}O$	.974, 6°	Chautard. J. 10, 483.
Diethylcamphresic acid	$C_9H_{22}O_7$	1.128, 13°	Schwanert. J. 16, 397.
Ethyl camphresate	$C_{16}H_{26}O_7$	1.0775, 13°	" "

29th. Miscellaneous Compounds.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Quinone	$C_6H_4O_2$	1.307	Schröder. Ber. 13, 1070.
"	"	1.318	
Phlorol	$C_8H_{10}O$	1.015, 12°	Sigel. A. C. P. 170, 345.
Carvol	$C_{10}H_{14}O$	.953, 15°	Völckel.
"	"	.9530, 20°	Gladstone. J. C. S. (2), 10, 1.
"	"	.9562, 20°	" "
"	"	.959	Beyer. Ber. 16, 1387.
"	"	.9593	
"	"	.9598	
"	"	.960, 18°.5	Flückiger.
"	"	.7866, 228°	Schiff. Ber. 19, 560.
"	"	.9667, 11°	Gladstone. J. C. S. 49, 623.
Eugenol	$C_{10}H_{12}O_2$	1.076	Stenhouse. A. C. P. 95, 106.
"	"	1.0684, 14°	Williams. A. C. P. 107, 240.
"	"	1.066, 15°	Church. J. C. S. (2), 13, 113.
"	"	1.0778, 0°	Wassermann. J. C. S. (2), 1, 706.
"	"	1.063, 18°.5	
"	"	1.0703, 14°	Tiemann and Kraaz. Ber. 15, 2066.
"	"	1.066, 17°.5	Gladstone. Bei. 9, 249.
Isoeugenol	"	1.080, 16°	Tiemann and Kraaz. Ber. 15, 2066.
Methyl eugenol ?	$C_{11}H_{14}O_2$	1.046, 15°	Church. J. C. S. (2), 13, 115.
" "	"	1.055, 15°	Petersen. Ber. 21, 1060.
Ethyl eugenol	$C_{12}H_{16}O_2$	1.026, 0°	Wassermann. A. C. P. 179, 376.
" "	"	1.0117, 18°.5	
Propyl eugenol	$C_{13}H_{18}O_2$	1.0024, 16°	Wassermann. Ber. 10, 237.
Isobutyl eugenol	$C_{14}H_{20}O_2$	.985, 15°	" "
Amyl eugenol	$C_{15}H_{22}O_2$	.976, 16°	Wassermann. Ber. 10, 238.
Allyl eugenol	$C_{13}H_{16}O_2$	1.018, 15°	" "
Coumarin	$C_9H_6O_2$	.9207	Gladstone. Bei. 9, 249.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Safrol -----	$C_{10} H_{10} O_2$ -----	1.1141, 0° -----	Grimaux and Ruotte. Z. C. 12, 411.
" -----	" -----	1.0956, 18° -----	J. Schiff. Ber. 17, 1935.
Coerulignol -----	$C_{10} H_{14} O_2$ -----	1.05645, 15° --	Pastrovich. M. C. 4, 189.
Phthalic anhydride -----	$C_8 H_4 O_3$ -----	1.527 } 4° -- {	Schröder. Ber. 12, 1611.
" " -----	" -----	1.530 } -----	
Benzoic anhydride -----	$C_{14} H_{10} O_3$ -----	1.231 } 4° -----	" "
" " -----	" -----	1.234 } -----	
" " -----	" -----	1.247 } -----	
Benzo-oenanthic anhy- dride.	$C_{14} H_{18} O_3$ -----	1.043 -----	Malerba. J. 7, 444.
Benzo-cinnamic anhy- dride.	$C_{16} H_{12} O_3$ -----	1.184, 23° -----	Gerhardt. J. 5, 449.
Benzo-cuminic anhydride	$C_{17} H_{16} O_3$ -----	1.115, 23° -----	Gerhardt. J. 5, 448.
Pyruvyl benzoate -----	$C_{10} H_{10} O_3$ -----	1.143, 25°, s.---	Romburgh. J. C. S. 44, 63.
Tannic acid -----	$C_{14} H_{10} O_9$ -----	1.097 -----	W. C. Smith. Am. J. P. 53, 145.
Benzoyl glycollic ether---	$C_{11} H_{12} O_4$ -----	1.1509, 20°.4---	Andrieff. J. 18, 344.
Propylene ethylphenylke- tate.	$C_{12} H_{16} O_2$ -----	.988, 22° -----	Morley and Green. Ber. 17, 3016.
Isomer of benzil -----	$C_{14} H_{10} O_2$ -----	1.104, 10° -----	Alexeyeff. J. 17, 335.
Saliretin -----	$C_{14} H_{14} O_3$ -----	1.1161, 25° -----	Beilstein and Seel- heim. J. 14, 765.
Isobenzpinacone -----	$C_{26} H_{22} O_2$ -----	1.10, 19° -----	Linnemann. J. 18, 556.
Derivative of propyl phe- nylacetate.	$C_{24} H_{20} O_3$ -----	1.039, 17° -----	Hodgkinson. J. C. S. 37, 482.
Derivative of ethyl phe- nylacetate.	$C_{18} H_{20} O_2$ -----	1.0628, 20° ---	" "
α Naphtol -----	$C_{10} H_8 O$ -----	1.224, 4° -----	Schröder. Ber. 12, 1611.
" -----	" -----	1.09539, 98°.7	Nasini and Bern- heimer. G. C. I. 15, 50.
β Naphtol -----	" -----	1.217, 4° -----	Schröder. Ber. 12, 1611.
" -----	" -----	1.23 -----	Brügelmann. Ber. 17, 2359.
Naphtol -----	" -----	.9048, at boil- ing point.	Ramsay. J. C. S. 39, 65.
Methyl α naphtol -----	$C_{11} H_{10} O$ -----	1.09636, 13°.9	} Nasini and Bern- heimer. G. C. I. 15, 50.
" " -----	" -----	1.07931, 34°.5	
" " -----	" -----	1.04661, 77°.7	
Propyl α naphtol -----	$C_{13} H_{14} O$ -----	1.04471, 18°.4	" "
Methyl α naphtyl oxide	$C_{10} H_7 O. C H_3$ -----	1.0974, 15° -----	Staedel. Ber. 14, 898.
Methyl naphtyl ketone---	$C_{10} H_7. C O. C H_3$ -----	1.124, 0° -----	Roux. Ann. (6), 12, 336.
Anthraquinone -----	$C_{14} H_8 O_2$ -----	1.438 -----	} Schröder. Ber. 13, 1070.
" -----	" -----	1.426 -----	
" -----	" -----	1.425 -----	
" -----	" -----	1.419 -----	
Phenanthrenequinone -----	" -----	1.404 } -----	" "
" -----	" -----	1.405 } -----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Asarone -----	$C_{12}H_{16}O_3$ -----	1.165, 18° -----	Butlerow and Rizza. B. S. C. 43, 114.
" -----	" -----	1.0743, 60° -----	
" -----	" -----	1.0655, 95° -----	
Salicin. Natural -----	$C_{13}H_{18}O_7$ -----	1.4338, 26° -----	Piria. Ann. (3), 44, 368.
" Artificial -----	" -----	1.4257 -----	
Santonin -----	$C_{15}H_{18}O_3$ -----	1.247, 20°.5 -----	Trommsdorf. A. C. P. 11, 190.
" -----	" -----	1.1866 -----	Carnelutti and Na- sini. Ber. 13, 2210.
Metasantonin. M. 136° -----	" -----	1.1649 -----	" "
" " 160°.5 -----	" -----	1.1975 -----	
Santonid -----	" -----	1.1967 -----	" "
Metasantonid -----	" -----	1.046 -----	" "
Parasantonid -----	" -----	1.1957 -----	" "
" -----	" -----	1.2015, 20° -----	Nasini. Ber. 14, 1513.
Santonie acid -----	$C_{15}H_{20}O_4$ -----	1.251 -----	Carnelutti and Na- sini. Ber. 13, 2210.
Parasantonie acid -----	" -----	1.2684 -----	" "
Methyl santonate -----	$C_{16}H_{22}O_4$ -----	1.1667 -----	" "
Methyl parasantonate -----	" -----	1.1777 -----	" "
Ethyl santonate -----	$C_{17}H_{24}O_4$ -----	1.1481 -----	" "
Ethyl parasantonate -----	" -----	1.153 -----	" "
Propyl santonate -----	$C_{18}H_{26}O_4$ -----	1.1185 -----	" "
" " -----	" -----	1.125, 20° -----	Nasini. G. C. I. 13, 165.
Propyl parasantonate -----	" -----	1.153 -----	Carnelutti and Na- sini. Ber. 13, 2210.
Isobutyl santonate -----	$C_{19}H_{28}O_4$ -----	1.1181 -----	" "
Allyl santonate -----	$C_{18}H_{24}O_4$ -----	1.1434 -----	" "
Styracin -----	$C_{18}H_{16}O_2$ -----	1.154 -----	Schröder. Ber. 13, 1070.
" -----	" -----	1.159 -----	
Pimaric acid -----	$C_{20}H_{30}O_2$ -----	1.047, 18° -----	Siewert. J. 12, 510.
Sylvic acid -----	" -----	1.1611, 18° -----	" "
Tropilene -----	$C_7H_{10}O$ -----	1.01, 0° -----	Ladenburg. Ber. 14, 2130.
" -----	" -----	1.0091, 0° -----	Ladenburg. A. C. P. 217, 139.
Cinacrol -----	$C_{10}H_{18}O_2$ -----	1.05 -----	Hirzel. Watts' Dic- tionary.
" -----	" -----	1.15 -----	
Colophonone -----	$C_{11}H_{18}O$ -----	.84 -----	Schiel. J. 13, 489.
Apiol -----	$C_{12}H_{14}O_4$ -----	1.015 -----	Lindenborn. Ber. 9, 1478.
Calophyllum resin -----	$C_{14}H_{18}O_4$ -----	1.12, cryst. -----	Levy. C. R. 18, 244.
Antiar resin -----	$C_{16}H_{24}O$ -----	1.032 -----	Mulder. A. C. P. 28, 307.
Tannin from Persea lingue -----	$C_{17}H_{17}O_9$ -----	1.352, 10° -----	Arata. Ber. 14, 2251.
From Sequoia gigantea -----	$C_{18}H_{20}O_3$ -----	1.045 -----	Lunge and Stein- kauler. Ber. 14, 2205.
Turmerol -----	$C_{19}H_{28}O$ -----	.9016, 17° -----	Jackson and Menke. A. C. J. 4, 371.
Guyaquillite -----	$C_{20}H_{26}O_3$ -----	1.092 -----	Dana's Mineralogy.
Hartin -----	$C_{20}H_{34}O_2$ -----	1.115, 19° -----	Schrötter. P. A. 59, 45.
Resin from rosewood -----	$C_{21}H_{21}O_6$ -----	1.2662, 15° -----	Terreil and Wolff. J. C. S. 38, 559.
Cardol -----	$C_{21}H_{31}O_2$ -----	.978, 23° -----	Städeler. J. 1, 577.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ivaol-----	$C_{26} H_{40} O$ -----	.9346, 15° ----	Planta-Reichenau. Z. C. 13, 618.
Cholesterin -----	$C_{26} H_{44} O$ -----	1.03, melted --	Hlasiwetz. A. C. P. 106, 354.
“-----	“-----	1.046 } 20° {	Mehu. J. C. S. (2),
“-----	“-----	1.047 }	13, 247.
Waldivine-----	$C_{36} H_{48} O_{20} \cdot 5 H_2 O$ ---	1.46 -----	Tanret. J. Ph. C. (5), 3, 61.
Cochlearin-----	$C_6 H_7 O_2 \cdot ?$ -----	1.248 -----	Maurach. Watts' Dictionary.
Aloisol-----	$C_6 H_8 O_3 \cdot ?$ -----	.877, 15° -----	Robiquet. Watts' Dictionary.
Xanthil-----	$C_4 H_{10} O_3 \cdot ?$ -----	.894 -----	Couërbe.
Picrolichenin-----	?-----	1.176 -----	Alms. A. C. P. 1, 61.
Phycic acid-----	?-----	.896 -----	Lamy. J. 5, 675.

XLVII. COMPOUNDS CONTAINING C, H, AND N.

1st. Cyanides and Carbamines of the Paraffin Series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl cyanide, or aceto-	$C H_3 \cdot C N$ -----	.8347, 0° ----	Kopp. A. C. P. 98, 367.
nitril. “ “ --	“-----	.8191, 16° --	
“ “ “ --	“-----	.8052, 0° -----	
“ “ “ --	“-----	.7155, 81°.2----	Schiff. Bei. 9, 559.
Methyl carbamine-----	“-----	.7557, 14° ----	Gautier. Roscoe and Schorlemmer's Treatise.
Ethyl cyanide, or propio-	$C_2 H_5 \cdot C N$ -----	.7017, 97° ----	Ramsay. J. C. S. 35, 463.
nitril. “ “ --	“-----	.80101, 0° -----	Thorpe. J. C. S. 37, 371.
“ “ “ --	“-----	.70098, 97°.08--	
“ “ “ --	“-----	.7862, 19° -----	
“ “ “ --	“-----	.7015, 97° ----	Schiff. Bei. 9, 559.
Ethyl carbamine-----	“-----	.787, 15° -----	Pelouze. Watts' Dictionary.
“ “-----	“-----	.7889, 12°.6----	Frankland and Kolbe. J. 1, 552.
Propyl cyanide, or buty-	$C_3 H_7 \cdot C N$ -----	.795, 12°.5----	Dumas. J. 1, 594.
ronitril.	“-----	.7596, 0° -----	Gautier. B. S. C. 11, 224.
Isopropyl carbamine-----	“-----	.8164, 0° ----	Lieben and Rossi. A. C. P. 158, 137.
Butyl cyanide, or valero-	$C_4 H_9 \cdot C N$ -----	.810 -----	Schlieper. A. C. P. 59, 15.
nitril.	“-----	.813, 15° ----	Guckelberger. J. 1, 852.
Isobutyl cyanide, or iso-	“-----		
valeronitril.	“-----		
“ “ “ --	“-----		

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Isobutyl cyanide, or isovaleronitril.	$C_4 H_9 \cdot C N$	.8226, 0°	Erlenmeyer and Hell. A. C. P. 160, 257. Schiff. Bei. 9, 559. Gladstone. Bei. 9, 249.
" " "	"	.8146, 10°	
" " "	"	.8060, 20°	
" " "	"	.6921, 129°.3	
" " "	"	.8010, 18°	Gladstone. Bei. 9, 249.
Isobutyl carbamine	"	.7873, 4°	Gautier. Z. C. 12, 415.
Isoamyl cyanide, or capronitril.	$C_5 H_{11} \cdot C N$	.8061, 20°	Frankland and Kolbe. J. 1, 559.
" " "	"	.8040, 18°	Gladstone. Bei. 9, 249.
" " "	"	.6861, 154°	Schiff. Bei. 9, 559.
Oenanthonitril	$C_6 H_{13} \cdot C N$	.895, 22°	Mehlis. A.C.P. 185, 368.
Heptyl cyanide	$C_7 H_{15} \cdot C N$	.8201, 13°.3	Felletár. J. 21, 634.
Octyl cyanide	$C_8 H_{17} \cdot C N$	.786, 16°	Eichler. Ber. 12, 1888.
Isoöctyl cyanide	"	.8187, 14°	Felletár. J. 21, 634.
Lauronitril	$C_{11} H_{23} \cdot C N$	.8350, 0°	Krafft and Stauffer. Ber. 15, 1728.
"	"	.8273, 15°	
"	"	.7675, 98°.9	
Myristonitril	$C_{13} H_{27} \cdot C N$	.8281, 19°	
"	"	.8241, 25°	" "
"	"	.7724, 99°	" "
Palmitonitril	$C_{15} H_{31} \cdot C N$	.8224, 31°	" "
"	"	.8186, 40°	
"	"	.7761, 98°.9	
Stearonitril	$C_{17} H_{35} \cdot C N$	.8178, 41°	
"	"	.8149, 45°	" "
"	"	.7790, 99°.2	" "

2d. Amines of the Paraffin Series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Trimethylamine	$N \cdot (C H_3)_3$	.673, 0°	Blennard. Roscoe and Schorlemmer's Treatise.
Ethylamine	$N H_2 \cdot C_2 H_5$	.6964, 8°	Wurtz. J. 3, 446.
Diethylamine	$N H \cdot (C_2 H_5)_2$	.7262, 0°	
"	"	.7159, 10°	Oudemans. Bei. 6, 353. Values given for every 5°.
"	"	.7055, 20°	
"	"	.6949, 30°	
"	"	.6844, 40°	
"	"	.6735, 50°	
"	"	.6680, 55°	
"	"	.7092, 19°	Gladstone. Bei. 9, 249.
"	"	.6684	Schiff. Ber. 19, 560.
"	"	.6686	
Triethylamine	$N \cdot (C_2 H_5)_3$	.7277, 20°	Brühl. Bei. 4, 779.
"	"	.7317, 19°	Gladstone. Bei. 9, 249.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Triethylamine-----	N. (C ₂ H ₅) ₃ -----	.6621, 89°-----	Schiff. Ber. 19, 560.
Propylamine-----	N H ₂ . C ₃ H ₇ -----	.7283, 0°-----	Silva. Z. C. 12, 638.
“-----	“-----	.7124, 21°-----	
“-----	“-----	.7186, 20°-----	
“-----	“-----	.6883, 49°.5-----	Schiff. Ber. 19, 560.
Isopropylamine-----	“-----	.690, 18°-----	Siersch. J. 21, 682.
Dipropylamine-----	“-----	.756, 0°-----	Vincent. Ber. 19, ref. 680.
Diisopropylamine-----	N H. (C ₃ H ₇) ₂ -----	.722, 22°-----	Siersch. J. 21, 682.
Tripropylamine-----	N. (C ₃ H ₇) ₃ -----	.7699, 0°-----	Zander. A. C. P. 214, 181.
“-----	“-----	.6426, 156°.5-----	
“-----	“-----	.771, 0°-----	
Butylamine-----	N H ₂ . C ₄ H ₉ -----	.7553, 0°-----	Lieben and Rossi. A. C. P. 93, 124.
“-----	“-----	.7333, 26°-----	
“-----	“-----	.7401, 20°-----	
Isobutylamine-----	“-----	.7357, 15°-----	Linnemann. Ann. (4), 27, 275.
“-----	“-----	.6865, 67°.7-----	Schiff. Ber. 19, 560.
Trimethylcarbinolamine-----	“-----	.6987, 15°-----	Linnemann. Ann. (4), 27, 268.
“-----	“-----	.7137, 0°-----	Rudneff. Ber. 12, 1023.
“-----	“-----	.7054, 8°-----	
“-----	“-----	.6931, 15°-----	
“-----	“-----	.7155, 0°-----	Brauner. A. C. P. 192, 72.
“-----	“-----	.7078, 7°.8-----	
“-----	“-----	.7004, 15°-----	
Tributylamine-----	N. (C ₄ H ₉) ₃ -----	.791, 0°-----	Lieben and Rossi. A. C. P. 165, 109.
“-----	“-----	.7782, 20°-----	
“-----	“-----	.7677, 40°-----	
Triisobutylamine-----	“-----	.785, 21°-----	Sachtleben. Ber. 11, 734.
Amylamine-----	N H ₂ . C ₅ H ₁₁ -----	.7503, 18°-----	Wurtz. J. 3, 451.
“-----	“-----	.815, 0°-----	Wurtz. J. 19, 425.
“-----	“-----	.7517, 22°.5-----	Plimpton. J. C. S. 39, 33.
“ Active-----	“-----	.7725 } 0°-----	Plimpton. J. C. S. 39, 331.
“ Inactive-----	“-----	.7678 }-----	
“-----	“-----	.6848, 94°.8-----	
Dimethylethylcarbinolamine.	“-----	.755, 0°-----	Wurtz. J. 19, 425.
“-----	“-----	.7611, 0°-----	Rudneff. J. C. S. 38, 545.
“-----	“-----	.7475, 15°-----	
Diamylamine-----	N H. (C ₅ H ₁₁) ₂ -----	.7825, 0°-----	Silva. Z. C. 10, 157.
“ Active-----	“-----	.7878, 0°-----	Plimpton. J. C. S. 39, 331.
“ Inactive-----	“-----	.7776, 14°-----	
Triamylamine. Active-----	N. (C ₅ H ₁₁) ₃ -----	.7964, 13°-----	
“ Inactive-----	“-----	.7882, 13°-----	“ “
Hexylamine-----	N H ₂ . C ₆ H ₁₃ -----	.768, 17°-----	Pelouze and Cahours. J. 16, 527.
Secondary hexylamine-----	“-----	.7638-----	Uppenkamp. Ber. 8, 57.
Octylamine-----	N H ₂ . C ₈ H ₁₇ -----	.786-----	Squire. J. 7, 485.

3d. The Aniline Series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Amidobenzene, or aniline	$C_6H_5.H_2N$	1.020, 16°	Hofmann. A. C. P. 47, 50.
"	"	1.028	Fritzche. J. P. C. 20, 453.
"	"	1.0361, 0°	Kopp. A. C. P. 98, 367.
"	"	1.0251, 13°.7	
"	"	1.018, 15°.5	Städeler and Arndt. J. 17, 425.
"	"	1.024, 17°.5	Lucius.
"	"	1.026, 15°	Kern. Ber. 10, 199.
"	"	.8527, 183°	Ramsay. J. C. S. 35, 463.
"	"	1.0379, 0°	Thorpe. J. C. S. 37, 371.
"	"	.87274, 183°.7	
"	"	1.02478, 16°.3	Johst. P. A. (2), 20, 56.
"	"	1.0216, 20°	Brühl.
"	"	1.0131, 25°.7	Schall. Ber. 17, 2555.
"	"	.9484, 100°.9	
"	"	1.016, 13°	Gladstone. Bei. 9, 249.
"	"	1.0322, 7°.5	
"	"	.8751, 183°.1	Schiff. Bei. 9, 559.
"	"	.92256, 130°.9	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubek. Z. P. C. 1, 655.
"	"	.91858, 135°.1	
"	"	.90708, 147°.2	
"	"	.90632, 148°	
"	"	.89272, 162°	
"	"	.89233, 162°.6	
"	"	.88077	
"	"	.88097	
"	"	.87443, 181°.6	
"	"	.87424, 181°.8	
"	"	.87384	183°.1
"	"	.87356	
"	"	1.0216, 20°	Knops. V. H. V. 1887, 17.
"	"	1.02204, 20°	Weegmann. Z. P. C. 2, 218.
Methylaniline	$C_6H_5.CH_3.HN$	.976, 15°	Hofmann. Ber. 7, 526.
Benzylamine	$C_6H_5.CH_2H_2N$	.990, 14°	Limpricht. J. 20, 510.
Orthotoluidine	$C_6H_4.CH_3.H_2N$	1.0002, 16°.3	Rosenstiehl. J. 21, 745.
"	"	1.003, 20°.2	Three preparations. Beilstein and Kuhlberg. Z. C. 12, 523.
"	"	1.002, 22°	
"	"	.998, 25°.5	
"	"	1.046	Rüdorff. Ber. 12, 251.
"	"	.8302, 197°	Ramsay. J. C. S. 35, 463.
"	"	.9986, 20°	Brühl. Bei. 4, 780.
"	"	1.0038, 15°	Hirsch. Ber. 18, 1511.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Orthotoluidine -----	$C_6H_4 \cdot CH_3 \cdot H_2N$ ---	.89397, 142°.7-	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubek. Z. P. C. 1, 657.
“ -----	“ ---	.89292, 143°.2-	
“ -----	“ ---	.87527, 163°.2-	
“ -----	“ ---	.87456, 163°.9-	
“ -----	“ ---	.86064 } 178°.4	
“ -----	“ ---	.86078 } 178°.4	
“ -----	“ ---	.85214 } 186°.9	
“ -----	“ ---	.85185 } 186°.9	
“ -----	“ ---	.84453, 198° -	
“ -----	“ ---	.84348 } 199° -	
“ -----	“ ---	.84320 } 199° -	
Metatoluidine -----	“ ---	.998, 25° -----	Lorenz. C. N. 30, 166.
“ -----	“ ---	.88528 } 149° -	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubek. Z. P. C. 1, 658.
“ -----	“ ---	.88561 } 149° -	
“ -----	“ ---	.86525, 169° -	
“ -----	“ ---	.86283, 171° -	
“ -----	“ ---	.85231, 184° -	
“ -----	“ ---	.85121, 185° -	
“ -----	“ ---	.84369, 191° -	
“ -----	“ ---	.84293, 193° -	
“ -----	“ ---	.83523 } 201° -	
“ -----	“ ---	.83537 } 201° -	
“ -----	“ ---	.83385 } 203° -	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubek. Z. P. C. 1, 658.
“ -----	“ ---	.83351 } 203° -	
Paratoluidine -----	“ ---	.88313, 143° -	
“ -----	“ ---	.88269, 143°.2-	
“ -----	“ ---	.86131 } 168° -	
“ -----	“ ---	.86130 } 168° -	
“ -----	“ ---	.85025, 178°.4-	
“ -----	“ ---	.84858, 181° -	
“ -----	“ ---	.83814 } 192°.6	
“ -----	“ ---	.83850 } 192°.6	
“ -----	“ ---	.83171 } 200° -	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubek. Z. P. C. 1, 658.
“ -----	“ ---	.83178 } 200° -	
“ -----	“ ---	.82995, 201°.5-	Hofmann. C. N. 27, 1.
Dimethylaniline -----	$C_6H_5 \cdot (CH_3)_2 \cdot N$ ---	.9553 -----	
“ -----	“ ---	.9645, 15° -----	
“ -----	“ ---	.7941, 190° -----	
“ -----	“ ---	.9575, 20° -----	Brühl. A. C. P. 235, 1.
Ethylaniline -----	$C_6H_5 \cdot C_2H_5 \cdot HN$ ---	.954, 18° -----	Hofmann. J. 2, 398.
Ethylamidobenzene. 1.2 -	$C_6H_4 \cdot C_2H_5 \cdot H_2N$ -	.983, 22° -----	Beilstein and Kuhlberg. A.C.P. 156, 206.
“ 1.4 -	“ ---	.975, 22° -----	“ “
Methyltoluidine. 1.2 -----	$C_6H_4 \cdot CH_3 \cdot CH_3 \cdot HN$ -	.973, 15° -----	Monnet, Reverdin, and Nölting. Ber. 11, 2278.
Xylidine. 1.2.4 -----	$C_6H_3 \cdot (CH_3)_2 \cdot H_2N$ -	.9942, 20° -----	Wroblevsky. Ber. 12, 1227.
“ “ -----	“ ---	1.0755, 17°.5-	Jacobsen. Ber. 17, 160.
“ “ -----	“ ---	.991, 15° -----	Nölting and Forel. Ber. 18, 2671.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Xylidine. 1.3.4	$C_6H_3(CH_3)_2H_2N$	.985, 18°.5	Tawildarow. Z. C. 13, 418.
" "	"	.9184, 25°	Hofmann. Ber. 9, 1295.
" "	"	.86651	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubeck. Z. P. C. 1, 662.
" "	"	.86687	
" "	"	.84874, 182°	
" "	"	.83473, 197°	
" "	"	.82374, 205°	
" "	"	.81633	
" "	"	.81597	
" "	"	.81454	
" "	"	.81436	
" 1.3.5	"	.9935, 0°	Wroblevsky. Ber. 10, 1249.
" "	"	.972, 15°	Nölting and Forel. Ber. 18, 2678.
" 1.4.2	"	.980, 15°	Nölting and Forel. Ber. 18, 2680.
"	"	.9867, 19°	Gladstone. Bei. 9, 249.
Dimethyltoluidine. 1.2	$C_6H_4.CH_3.(CH_3)_2N$	.9324	Hofmann. C. N. 27, 1.
" 1.3	"	.9368	" "
" 1.4	"	.988	" "
Propylaniline	$C_6H_5.C_3H_7HN$	.949, 18°	Pictet and Crépieux. Ber. 21, 1106.
Ethyltoluidine. 1.3	$C_6H_4.CH_3.C_2H_5HN$	.869, 20°	Wroblevsky. J. C. S. (2), 13, 455.
" " 1.4	"	.9391, 15°.5	Morley and Abel. J. 4, 497.
Cumidine	$C_6H_4.C_3H_7.H_2N$	.8526	Nicholson. J. 1, 664.
Pseudocumidine. 1.3.5.6	$C_6H_2(CH_3)_3H_2N$	.9633	Hofmann. C. N. 27, 1.
Diethylaniline	$C_6H_5(C_2H_5)_2N$	.939, 18°	Hofmann. J. 2, 399.
Isobutylaniline	$C_6H_5.C_4H_9.HN$	.9262, 15°	Giannetti. Ber. 14, 1759.
"	"	.940, 18°	Pictet and Crépieux. Ber. 21, 1106.
Dimethylxylidine	$C_6H_3(CH_3)_2(CH_3)_2N$	.9293	Hofmann. C. N. 27, 1.
Tetramethylaniline	$C_6H(CH_3)_4H_2N$	.978, 24°	Hofmann. Ber. 17, 1912.
Isoamylaniline	$C_6H_5.C_5H_{11}HN$	.928, 15°	Pictet and Crépieux. Ber. 21, 1106.
Diethyltoluidine. 1.4	$C_6H_4.CH_3(C_2H_5)_2N$	.9242, 15°.5	Morley and Abel. J. 7, 498.
Dimethylmesidine. 1.3.5.6	$C_6H_2(CH_3)_3(CH_3)_2N$	.9076	Hofmann. C. N. 27, 1.
Methylamylaniline	$C_6H_5.C_5H_{11}CH_3N$	.906, 20°	Claus and Rautenberg. Ber. 14, 622.
Dipropylaniline	$C_6H_5(C_3H_7)_2N$	.9240, 0°	Zander. A. C. P. 214, 181.
"	"	.7267, 245°.4	
Diisopropylaniline	"	.9338, 0°	
"	"	.7504, 221°	
Trimethyldiethylaniline	$C_6H(CH_3)_3(C_2H_5)_2H_2N$	.971	Ruttan. Ber. 19, 2384.
Allylaniline	$C_6H_5.C_3H_5HN$	.982, 25°	Schiff. J. 17, 415.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Diallylaniline -----	$C_6 H_5 (C_3 H_5)_2 N$ -----	.9680, 0° -----	Zander. A.C.P. 214, 181.
" -----	" -----	.7667, 244° -----	
Diphenylamine -----	$N H. (C_6 H_5)_2$ -----	1.156 } -----	Schröder. Ber. 12, 561.
" -----	" -----	1.161 } 4° -----	
" -----	" -----	.8293, 310° -----	Ramsay. J. C. S. 35, 463.
Methyldiphenylamine -----	$N. (C_6 H_5)_2 C H_3$ -----	1.0476, 20° -----	Brühl. A. C. P. 235, 1.
Dibenzylamine -----	$N H. (C_7 H_7)_2$ -----	1.033, 14° -----	Limpricht. J. 20, 510.
Amidobenzylamine -----	$C_7 H_{10} N_2$ -----	1.08, 20° -----	Amsel and Hofmann. Ber. 19, 1288.
Metamidodimethylaniline -----	$C_8 H_{12} N_2$ -----	.995, 25° -----	Groll. Ber. 19, 200.

4th. The Pyridine Series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Pyridine -----	$C_5 H_5 N$ -----	.9858, 0° -----	Anderson. J. 10, 397.
" -----	" -----	.924, 22° -----	Thenius. J. 14, 502.
" -----	" -----	.8617, 117° -----	Ramsay. J. C. S. 35, 463.
" -----	" -----	.9802, 0° -----	Richard. Ber. 13, 198.
" -----	" -----	.8823 } -----	Schiff. Ber. 19, 560.
" -----	" -----	.8826 } 115° -----	
" -----	" -----	1.0033, 0° -----	Ladenburg. Ber. 21, 289.
α Picoline -----	$C_6 H_7 N$ -----	.955, 10° -----	Anderson. A. C. P. 60, 93.
" -----	" -----	.9613, 0° -----	Anderson. J. 10, 397.
" -----	" -----	.933, 22° -----	Thenius. J. 14, 502.
" -----	" -----	.8197, 134° -----	Ramsay. J. C. S. 35, 463.
" -----	" -----	.9560, 0° -----	Richard. Ber. 13, 198.
" -----	" -----	.96161, 0° -----	} Thorpe. J. C. S. 37, 371.
" -----	" -----	.83258, 123°.5 -----	
" -----	" -----	.94093, 23°.5 -----	Gladstone. Bei. 9, 249.
" -----	" -----	.96559, 0° -----	Lange. Ber. 18, 3436.
" -----	" -----	.96477, 4° -----	Dürkopp and Schlaugk. Ber. 20, 1660.
" -----	" -----	.9656, 0° -----	Ladenburg. C. R. 103, 692.
β Picoline -----	" -----	.97712, 0° -----	} Hesekiel. Ber. 18, 3091.
" -----	" -----	.94965, 30° -----	
" -----	" -----	.9771, 0° -----	Ladenburg. C. R. 103, 692.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
γ Picoline	$C_6 H_7 N$	.9708, 0°	Lange. Ber. 18, 3436.
"	"	.9708, 0°	Ladenburg. C. R. 103, 692.
"	"	.9742, 0°	Ladenburg. Ber. 21, 287.
α Lutidine	$C_7 H_9 N$	.928	Williams. J. 7, 494.
"	"	.9467, 0°	Anderson. J. 10, 397.
"	"	.945, 22°	Thenius. J. 14, 502.
"	"	.9467, 0°	Williams. J. 17, 437.
"	"	.7916, 154°	Ramsay. J. C. S. 35, 463.
"	"	.9377, 0°	Richard. Ber. 13, 198.
"	"	.9545, 0°	Ladenburg and Roth. Ber. 18, 52.
" $\alpha-\gamma$	"	.9503, 0°	Ladenburg and Roth. Ber. 18, 913.
" $\alpha-\alpha$	"	.9424, 0°	Ladenburg. C. R. 103, 692.
β Lutidine	"	.9555, 0°	Williams. J. 17, 437.
"	"	.9593, 0°	Coninck. C. R. 91, 296.
α Ethylpyridine	"	.9495	Ladenburg. Ber. 20, 1653.
"	"	.9498	
"	"	0°	
γ Ethylpyridine	"	.9522, 0°	Ladenburg. Ber. 18, 2963.
"	"	.9358, 20°	
α Collidine	$C_8 H_{11} N$	.921	Anderson. J. 7, 490.
"	"	.9439, 0°	Anderson. J. 10, 397.
"	"	.953, 22°	Thenius. J. 14, 502.
"	"	.943	Wurtz. Ber. 12, 1710.
"	"	.7839, 173°	Ramsay. J. C. S. 35, 463.
"	"	.9291, 0°	Richard. Ber. 13, 198.
"	"	.917, 15°	Hantzsch. Ber. 15, 2914.
"	"	.9286, 16°.8	Weidel and Pick. S. W. A. 90, 972.
"	"	.9224, 15°	Mohler. Ber. 21, 1014.
β Collidine	"	.9656, 0°	Coninck. C. R. 91, 296.
Aldehyde collidine	"	.9389, 4°	Dürkopf. Ber. 18, 920.
α Isopropylpyridine	"	.9342, 0°	Ladenburg. C. R. 103, 692.
γ Isopropylpyridine	"	.9408, 0°	Ladenburg and Schrader. Ber. 17, 1121.
"	"	.9439, 0°	Ladenburg. C. R. 103, 692.
γ Propylpyridine	"	.9393, 0°	Two lots. Ladenburg. Ber. 17, 772.
α Propylpyridine	"	.9411, 0°	
"	"	.9306, 10°	
Parvoline	$C_9 H_{13} N$	.966, 22°	Thenius. J. 14, 502.
"	"	.916, 14°	Engelmann. J. C. S. 50, 259.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Parvoline-----	$C_9 H_{13} N$ -----	.94185, 0° --	{ Dürkopf and Schlaugk. Ber. 21, 832. Thenius. J. 14, 502. " " " " " " Ladenburg. Ber. 19, 2578.
"-----	"-----	.92894, 16° --	
Coridine-----	$C_{10} H_{15} N$ -----	.974, 22° -----	
Rubidine-----	$C_{11} H_{17} N$ -----	1.017, 22° -----	
Viridine-----	$C_{12} H_{19} N$ -----	1.024, 22° -----	
Allyl pyridine-----	$C_8 H_9 N$ -----	.9595, 0° -----	
Piperidine. From piperine	$C_5 H_{11} N$ -----	.8810, 0° ----	} Ladenburg and Roth. Ber. 17, 513.
" Synthetic-----	"-----	.8814, 4° ----	
"-----	"-----	.7791	} 105°-- Schiff. Ber. 19, 560.
"-----	"-----	.7801	
"-----	"-----	.7810	
α Methylpiperidine-----	$C_6 H_{13} N$ -----	.8601, 0° -----	Ladenburg and Roth. Ber. 18, 47.
"-----	"-----	.860, 0° -----	Ladenburg. C. R. 103, 747.
β Methylpiperidine-----	"-----	.8686, 4° -----	Hesekiel. Ber. 18, 910.
"-----	"-----	.8684, 0° -----	Ladenburg, C. R. 103, 747.
α - α Dimethylpiperidine-----	$C_7 H_{15} N$ -----	.8492, 4° -----	Ladenburg and Roth. Ber. 18, 54.
α - γ Dimethylpiperidine-----	"-----	.8615, 0° -----	Ladenburg. C. R. 103, 747.
α Ethylpiperidine-----	"-----	.8674, 0° -----	Ladenburg. Ber. 18, 2963.
γ Ethylpiperidine-----	"-----	.8759, 0° -----	Ladenburg. Ber. 18, 2964.
Methyl- α -ethylpiperidine-----	$C_8 H_{17} N$ -----	.8495, 0° -----	Ladenburg. C. R. 103, 747.
α Propylpiperidine. Coniin	"-----	.89 -----	Geiger.
" "-----	"-----	.878 -----	Blyth. J. 2, 388.
" "-----	"-----	.846, 12°.5-----	Petit. B. S. C. 27, 337.
" "-----	"-----	.886 -----	Schorm. Ber. 14, 1767.
" "-----	"-----	.913, 0° --	} Two preparations. Schiff. A. C. P. 166, 88.
" "-----	"-----	.899, 15° --	
" "-----	"-----	.842, 90° --	
" "-----	"-----	.886, 0° --	
" "-----	"-----	.873, 15° --	
" "-----	"-----	.911, 90° --	
" "-----	"-----	.863 -----	
" "-----	"-----	.875, 0° -----	Ladenburg. Ber. 17, 774.
" "-----	"-----	.8626, 0° -----	Ladenburg. Ber. 17, 772.
γ Propylpiperidine-----	"-----	.870, 0° -----	Ladenburg. Ber. 19, 2580.
α Isopropylpiperidine-----	"-----	.8660, 0° -----	Ladenburg. Ber. 17, 772.
"-----	"-----	.8676, 0° -----	Ladenburg. Ber. 17, 1676.
"-----	"-----	.8676, 0° -----	Ladenburg. C. R. 103, 747.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl- α γ -isopropylpiperidine.	$C_9 H_{19} N$	.8593, 0°	Ladenburg. C. R. 103, 747.
Copellidine	$C_8 H_{17} N$	.8653, 0°	Dürkopf. Ber. 18, 920.
"	"	.8546, 15°	
Methylcopellidine	$C_9 H_{19} N$	.8519, 0°	" "
"	"	.8440, 13°	
Dimethylcopellidine	$C_{10} H_{21} N$	.7816, 25°	" "
α Pipecoleine	$C_6 H_{11} N$	.8801, 0°	Ladenburg. Ber. 20, 1646.
γ Pipecoline	$C_6 H_{13} N$	.8674, 0°	Ladenburg. Ber. 21, 288.
α Isopropylpiperidine	$C_8 H_{15} N$	.8956, 0°	Ladenburg. Ber. 20, 1647.
Hydrolutidine. α - γ	$C_7 H_{13} N$	.8615, 0°	Ladenburg and Roth. Ber. 18, 919.
Hydrotropidine	$C_8 H_{15} N$	.9366, 0°	Ladenburg. Ber. 16, 1409.
"	"	.9259, 15°	
α Coniceine	"	.893, 15°	Hofmann. Ber. 18, 10.
Paradiconiine	$C_{16} H_{27} N$	.915, 15°	Schiff. A. C. P. 166, 88.
Quinoline or chinoline	$C_9 H_7 N$	1.081, 10°	Hofmann. A. C. P. 47, 79.
"	"	1.1081, 0°	Skraup. Ber. 14, 1002.
"	"	1.0947, 20°	
"	"	1.0699, 50°	Coninck. J. C. S. 44, 89.
"	"	1.1055, 0°	
"	"	1.0965, 11°.5	Gladstone. Bei. 9, 249.
"	"	1.096	
"	"	1.1021	Schiff. Ber. 19, 560.
"	"	.9211, 234°	
Lepidine	$C_{10} H_9 N$	1.072, 15°	Williams. J. 9, 536.
Orthomethylquinoline	"	1.0852, 0°	Skraup. Ber. 14, 1002.
"	"	1.0734, 20°	
"	"	1.0586, 50°	Skraup. Ber. 15, 2255.
Metamethylquinoline	"	1.0839, 0°	
"	"	1.0722, 20°	Skraup. Ber. 14, 1002.
"	"	1.0576, 50°	
Paramethylquinoline	"	1.0815, 0°	Skraup. Ber. 14, 1002.
"	"	1.0671, 20°	
"	"	1.0560, 50°	Berend. Ber. 18, 3165.
Dimethylquinoline	$C_{11} H_{11} N$	1.0752, 4°	
" α - γ	"	1.0611, 15°	Beyer. J. P. C. (2), 33, 402.
Metadipyridyl	$C_{10} H_8 N_2$	1.1757, 0°	Skraup and Vortmann. M. C. 4, 593.
"	"	1.1635, 20°	
"	"	1.1493, 50°	Ramsay. P. M. (5), 6, 29.
Isodipyridine	$C_{10} H_{10} N_2$	1.08	
"	"	1.1245, 13°	Cahours and Etard. Ber. 13, 777.
Dipicoline	$C_{12} H_{14} N_2$	1.12	Ramsay. P. M. (5), 6, 31.
"	"	1.077	Anderson.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Nicotine-----	$C_{10} H_{14} N_2$ -----	1.033, 4° ----	Barral. J. 1, 614.
"-----	"-----	1.027, 15° --	
"-----	"-----	1.018, 30° --	
"-----	"-----	1.0006, 50° --	
"-----	"-----	.9424, 101°.5 }	
"-----	"-----	1.01837, 10°.2 }	Landolt. A. C. P. 189, 241.
"-----	"-----	1.01101, 20° --	
"-----	"-----	1.00373, 30° --	
"-----	"-----	1.0111, 15° ----	Skalweit. Ber. 14, 1809.
Hydronicotine -----	$C_{10} H_{16} N_2$ -----	.993, 17° ----	Etard. C. R. 97, 1218.
Dipiperidyl -----	$C_{10} H_{20} N_2$ -----	.9561, 4° ----	Liebrecht. Ber. 19, 2591.
α Stilbazoline -----	$C_{13} H_{19} N$ -----	.9874, 0° ----	Baurath. Ber. 21, 818.
Dihydro- α -stilbazol -----	$C_{13} H_{13} N$ -----	1.0465, 0° ----	" "

5th. Miscellaneous Compounds.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Dimethyl hydrazin -----	$C_2 H_8 N_2$ -----	.801, 11° ----	Renouf. Ber. 13, 2171.
Ethylene diamine -----	$C_2 H_4 (N H_2)_2$ -----	.902 -----	Rhoussopolos and Meyer. J. C. S. 42, 940.
Propylene diamine -----	$C_3 H_6 (N H_2)_2$ -----	.878, 15° ----	Hofmann. Ber. 6, 310.
Pentamethylene diamine -----	$C_5 H_{10} (N H_2)_2$ -----	.9174, 0° ----	Ladenburg. Ber. 18, 2957.
β Methyltetramethylene diamine.	"-----	.8836, 20° ----	Oldach. Ber. 20, 1655.
Ethylene cyanide-----	$C_2 H_4 (C N)_2$ -----	1.023, 45° ----	Simpson. J. 14, 654.
Pyrotartronitril -----	$C_3 H_6 (C N)_2$ -----	.9961, 11° ----	Henry. Ber. 18, ref. 330.
Crotonitril -----	$C_4 H_5 N$ -----	.8389, 12° ----	Will and Körner.
"-----	"-----	.8491, 0° ----	Rinne and Tollens. A. C. P. 159, 105.
"-----	"-----	.8351, 15° --	
Allyl carbamine-----	$C_3 H_5. C N$ -----	.812, 0° ----	
"-----	"-----	.794, 17° ----	Lieke. A. C. P. 112, 319.
Allylamine -----	$C_3 H_5. H_2 N$ -----	.864, 15° ----	Oeser. J. 18, 506.
"-----	"-----	.7754, 10°.5 }	Foursamples. Glad- stone. Bei. 9, 249.
"-----	"-----	.7775, 11° --	
"-----	"-----	.7693, 17°.5 }	
"-----	"-----	.7684, 19° --	
"-----	"-----	.7261, 56° ----	Schiff. Bei. 9, 559.
Triallylamine -----	$(C_3 H_5)_3 N$ -----	.8206, 0° ----	Zander. A. C. P. 214, 181.
"-----	"-----	.6826, 155°.5 }	
Propylallylamine-----	$C_3 H_7. C_3 H_5. H N$ --	.7708, 18° ----	Liebermann and Paal. Ber. 16, 523.
Isoamylallylamine-----	$C_5 H_{11}. C_3 H_5. H N$ --	.7777, 18° ----	" "

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Pyrrol-----	$C_4 H_5 N$ -----	1.077-----	Anderson. J. 10, 399.
"-----	"-----	.7276, 133°-----	Ramsay. J. C. S. 35, 463.
"-----	"-----	.9752, 12°.5-----	Weidel and Ciamician. Ber. 13, 71.
"-----	"-----	.9606-----	Gladstone. Bei. 9, 249.
Methylpyrrol-----	$C_5 H_7 N$ -----	.9203, 10°-----	Bell. Ber. 10, 1866.
Ethylpyrrol-----	$C_6 H_9 N$ -----	.8881, 16°-----	Bell. Ber. 9, 936.
"-----	"-----	.9042, 10°-----	Bell. Ber. 10, 1862.
Amylpyrrol-----	$C_9 H_{15} N$ -----	.8786, 10°-----	Bell. Ber. 10, 866.
Pyrrolidin-----	$C_4 H_9 N$ -----	.879, 0°-----	Petersen. Ber. 21, 290.
"-----	"-----	.871, 10°-----	
Methylpyrrolidin-----	$C_5 H_{11} N$ -----	.8654, 0°-----	Oldach. Ber. 20, 1155.
Methylphenylpyrazol-----	$C_{10} H_{10} N_2$ -----	1.085-----	Claisen and Stylos. Ber. 21, 1143 and 1147.
"-----	"-----	1.081-----	
Ethylphenylpyrazol-----	$C_{11} H_{12} N_2$ -----	1.064, 15°-----	Claisen and Stylos. Ber. 21, 1148.
Propylphenylpyrazol-----	$C_{12} H_{14} N_2$ -----	1.0435, 15°-----	"-----
α Glucosine-----	$C_6 H_8 N_2$ -----	1.038, 0°-----	Tanret. B. S. C. 44, 104.
β Glucosine-----	$C_7 H_{10} N_2$ -----	1.012, 0°-----	"-----
"-----	"-----	.9826, 12°-----	Morin. Ber. 21, ref. 188.
Methylglyoxalin-----	$C_4 H_6 N_2$ -----	1.0363-----	Wallach and Schulze. Ber. 14, 424.
"-----	"-----	1.0359, 23°-----	Goldschmidt. Ber. 14, 1846.
Ethylglyoxalin-----	$C_5 H_8 N_2$ -----	.999-----	Wallach. Ber. 16, 535.
Oxalmethylethylin-----	"-----	1.0051, 11°-----	Radziszewski. Ber. 16, 487.
Propylglyoxalin-----	$C_6 H_{10} N_2$ -----	.967, 16°-----	Wallach. Ber. 15, 650.
Oxalethylethylin-----	"-----	.9820-----	Wallach and Stricker. Ber. 13, 512.
"-----	"-----	.980-----	Radziszewski. Ber. 16, 487.
Oxalethylpropylin-----	$C_7 H_{12} N_2$ -----	.9813-----	"-----
Oxalpropylethylin-----	"-----	.9641-----	"-----
Oxalpropylpropylin-----	$C_8 H_{14} N_2$ -----	.9520-----	Wallach and Schulze. Ber. 14, 424.
"-----	"-----	.951-----	Radziszewski. Ber. 16, 487.
Amylglyoxalin-----	"-----	.940, 18°-----	Wallach. Ber. 15, 651.
Oxalethylisoamylin-----	$C_9 H_{16} N_2$ -----	.9291, 19°.6-----	Radziszewski and Szul. Ber. 17, 1291.
Oxalpropylisoamylin-----	$C_{10} H_{18} N_2$ -----	.9149, 18°-----	"-----
Oxalisobutylisoamylin-----	$C_{11} H_{20} N_2$ -----	.9048, 16°.1-----	"-----
Oxalisomyliisoamylin-----	$C_{12} H_{22} N_2$ -----	.9029, 19°-----	"-----

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Oxalmethyloenanthylin	$C_{10} H_{18} N_2$	.9282, 16°.5	Karcz. Ber. 20, ref. 474
Oxalethyloenanthylin	$C_{11} H_{20} N_2$	.9210, 16°.5	" "
Oxalpropyloenanthylin	$C_{12} H_{22} N_2$	.9192, 17°	" "
Benzonitril	$C_6 H_5. C N$	1.0073, 15°	Fehling. A. C. P. 49, 91.
"	"	1.0230, 0°	Kopp. A. C. P. 98, 367.
"	"	1.0084, 16°.8	
"	"	.8330, 192°	
"	"	1.0052, 18°	Gladstone. Bei. 9, 249.
Benzyl cyanide, or α toluic nitril.	$C_7 H_7. C N$	1.0155, 8°	Radziszewski. Ber. 3, 198.
" " "	"	1.0146, 18°	Hofmann. Ber. 7, 519.
Phenylpropionitril	$C_8 H_9. C N$	1.0014, 18°	Hofmann. Ber. 7, 520.
Orthoxylyl cyanide	"	1.0156, 22°	Radziszewski and Wispek. Ber. 18, 1279.
Metaxylyl cyanide	"	1.0022, 22°	" "
Paraxylyl cyanide	"	.9922, 22°	" "
Cumonitril	$C_9 H_{11}. C N$	.765, 14°	Hofmann. J. 1, 595.
Azobenzene	$C_{12} H_{10} N_2$	1.180	Schröder. Ber. 12, 561.
"	"	1.196	
"	"	1.202	
"	"	1.223	
"	"	.8256, 293°	Ramsay. J. C. S. 35, 463.
Phenyl hydrazin	$C_6 H_8 N_2$	1.091, 21°	Fischer. A. C. P. 190, 82.
" " "	"	1.097, 22°.7	Fischer. A. C. P. 236, 198.
Chinaldin	$C_{10} H_9 N$	1.0646, 20°	Küsel. Ber. 19, 2249.
Piperyl hydrazin	$C_5 H_{12} N_2$	.9283, 14°.6	Knorr. A. C. P. 221, 301.
Diethylaniline azylin	$C_{20} H_{28} N_4$	1.107, 15°, s.	Lippmann and Fleissner. Ber. 16, 1417.
Methyl indol	$C_9 H_9 N$	1.0707, 0°	Lipp. Ber. 17, 2511.
Cyanoconicine	$C_9 H_{14} N_2$	.93	E. v. Meyer. B. S. C. 39, 124.
Ptomaine	$C_8 H_{11} N$	.9865, 0°	Coninck. C. R. 106, 859.
"Acetylamine. ?"	$C_2 H_5 N. ?$	.975, 15°	Natanson. J. 9, 527.

XLVIII. COMPOUNDS CONTAINING C, H, N, AND O.

1st. Nitrites and Nitrates of the Paraffin Series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl nitrite	$C H_3. N O_2$	.991	Strecker. J. 7, 521.
Ethyl nitrite	$C_2 H_5. N O_2$	.886, 4°	Dumas and Boullay. Ann. (2), 37, 19.
" "	"	.947, 15°	Liebig. A. C. P. 30, 143.
" "	"	.898	Mohr. J. 7, 561.
" "	"	.900, 15°.5	Brown. J. 9, 575.
Propyl nitrite	$C_3 H_7. N O_2$	.935, 21°	Cahours. Les Mon- des, 32, 280.
Isopropyl nitrite	"	.856, 0°	Silva. Z. C. 12, 637.
" "	"	.844, 24°	
Isobutyl nitrite	$C_4 H_9. N O_2$	.89445, 0°	Chapman and Smith. J. C. S. 22, 153.
" "	"	.8771, 16°	
" "	"	.82568, 50°	
Trimethylcarbyl nitrite	"	.8915, 0°	Bertoni. Ber. 19, ref. 98.
Amyl nitrite	$C_5 H_{11}. N O_2$	.8773	Rieckher. J. 1, 699.
" "	"	.9020	Hilger. Am. Ch. 5, 231.
" "	"	.9026	
" "	"	.8734, 21°	Gladstone. Bei. 9, 249.
Dimethylethylcarbyl ni- trite.	"	.9033, 0°	Bertoni. G. C. I. 16, 512.
Octyl nitrite	$C_8 H_{17}. N O_2$	.862, 17°	Eichler. Ber. 12, 1887.
Methylhexylcarbyl nitrite	"	.881, 0°	Bertoni. G. C. I. 16, 512.
Methyl nitrate	$C H_3. N O_3$	1.182, 20°	Dumas and Peligot. Ann. (2), 58, 39.
Ethyl nitrate	$C_2 H_5. N O_3$	1.112, 17°	Millon. Ann. (3), 8, 236.
" "	"	1.1322, 0°	Kopp. A. C. P. 98, 367.
" "	"	1.1123, 15°.5	
" "	"	1.0948, 17°	Wittstein. J. 18, 470.
" "	"	.9991, 87°	Ramsay. J. C. S. 35, 463.
" "	"	1.1067, 25°	Gladstone. Bei. 9, 249.
Isopropyl nitrate	$C_3 H_7. N O_3$	1.054, 0°	Silva. Z. C. 12, 637.
" "	"	1.036, 19°	
Isobutyl nitrate	$C_4 H_9. N O_3$	1.0384, 0°	Chapman and Smith. J. C. S. 22, 153.
" "	"	1.020, 16°	
Amyl nitrate	$C_5 H_{11}. N O_3$	.902, 22°	Rieckher. J. 1, 699.
" "	"	.994, 10°	Hofmann. J. 1, 699.
" "	"	1.000, 7°—8°	Chapman and Smith. J. 20, 550.
" "	"	.8698, 147°	Schiff. Bei. 9, 559.
Cetyl nitrate	$C_{16} H_{33}. N O_3$	.91	Champion. C. R. 73, 571.

2d. Nitro-Derivatives of the Paraffin Series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Nitromethane	$C H_3 N O_2$	1.0236, 101°.5	Schiff. Bei. 9, 559.
Nitroethane	$C_2 H_5 N O_2$	1.0582, 13°	Meyer and Stuber. Ann. (4), 28, 138.
"	"	.9329, 114°.5	Schiff. Bei. 9, 559.
"	"	1.0550, 18°	Gladstone. Bei. 9, 249.
Nitroheptane	$C_7 H_{15} N O_2$	.9369, 19°	Beilstein and Kurbatow. Ber. 13, 2029.
Dinitroethane	$C_2 H_4 (N O_2)_2$	1.3503, 23°.5	Meer. Ber. 8, 1080.
Dinitropropane	$C_3 H_6 (N O_2)_2$	1.258, 22°.5	Meer. Ber. 8, 1087.
Dinitrobutane	$C_4 H_8 (N O_2)_2$	1.205, 15°	Chancel. Ber. 16, 1495.
Dinitrohexane	$C_6 H_{12} (N O_2)_2$	1.1381, 0°	Chancel. C. R. 100, 601.
"	"	1.1333, 5°	
"	"	1.1284, 10°	
"	"	1.1235, 15°	
"	"	1.1185, 20°	
"	"	1.1135, 25°	
"	"	1.1085, 30°	
"	"	1.1034, 35°	
"	"	1.0983, 40°	
Ethyl nitroacetate	$C_4 H_7 N O_4$	1.133, 0°	Forcrand. C. R. 88, 975.
Nitrocacrylic acid	$C_8 H_{15} N O_4$	1.093, 18°	Wirz. A. C. P. 104, 289.
Ethyl nitrocacrylate	$C_{10} H_{19} N O_4$	1.031, 18°	Wirz. A. C. P. 104, 290.
Nitrosodiethylamine	$C_4 H_{10} N_2 O$	.951, 17°.5	Geuther. J. 16, 409.
Nitrosodipropylamine	$C_6 H_{14} N_2 O$	.924, 14°	Siersch. J. 20, 537.
"	"	.931, 0°	Vincent. Ber. 19, ref. 680.
Derivative of nitroethane	$C_5 H_7 N O$	1.0102, 15°	Götting. A. C. P. 243, 104.
"	$C_6 H_9 N O$	.9750, 15°	" "
"	"	1.0	Sokolow. Ber. 19, ref. 540.

3d. Aromatic Nitro-Compounds.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Nitrobenzene -----	$C_6H_5 \cdot N O_2$ -----	1.209, 15° -----	Mitscherlich. P. A. 31, 625.
" -----	" -----	1.2002, 0° -- } -----	Kopp. A. C. P. 98, 367.
" -----	" -----	1.1866, 14°.4 } -----	
" -----	" -----	1.2159, 5°-10° -----	Regnault. P. A. 62, 50.
" -----	" -----	1.2107, 10°-15° -----	
" -----	" -----	1.2504, 15°-20° -----	Naumann. Ber. 10, 2015.
" -----	" -----	1.206, 20° -----	
" -----	" -----	1.0210, 220° -----	Ramsay. J. C. S. 35, 463.
" -----	" -----	1.2039, 20° -----	Brühl. Bei. 4, 780.
" -----	" -----	1.1740, 25°.5 -----	Schall. Ber. 17, 2555.
" -----	" -----	1.0851, 116°.2 -----	
" -----	" -----	1.2121, 7°.5 -----	Gladstone. Bei. 9, 249.
" -----	" -----	1.07134, 150°.7 -----	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubek. Z. P. C. 1, 655.
" -----	" -----	1.07033, 153°.3 -----	
" -----	" -----	1.06276, 158°.4 -----	
" -----	" -----	1.04807, 173°.2 -----	
" -----	" -----	1.04477, 186°.6 -----	
" -----	" -----	1.03246, 189°.4 -----	
" -----	" -----	1.03059, 189°.4 -----	
" -----	" -----	1.01794, 200°.1 -----	
" -----	" -----	1.00846, 207°.3 -----	
" -----	" -----	1.00722, 208°.2 -----	
" -----	" -----	1.00713, 208°.2 -----	
Dinitrobenzene -----	$C_6H_4(N O_2)_2$ -----	1.3690, 98°.1 -----	Schiff. A. C. P. 223, 247.
Nitrotoluene -----	$C_6H_4 \cdot CH_3 \cdot N O_2$ -----	1.18, 16°.5 -----	Deville. Ann. (3), 3, 175.
" -----	" -----	1.1231, 54° -----	Schiff. A. C. P. 223, 247.
" -----	" -----	1.1649, 15°.5 -----	Gladstone. Bei. 9, 249.
Orthonitrotoluene -----	" -----	1.162, 23° -- } -----	Beilstein and Kuhlberg. A. C. P. 155, 17.
" -----	" -----	1.163, 23°.5 } -----	
" -----	" -----	1.159 -----	Leeds. Ber. 14, 483.
" -----	" -----	1.02509 } 160° -----	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubek. Z. P. C. 1, 655.
" -----	" -----	1.02483 } -----	
" -----	" -----	.99814, 186°.1 -----	
" -----	" -----	.99679, 187°.1 -----	
" -----	" -----	.98403 } 197°.7 -----	
" -----	" -----	.98388 } -----	
" -----	" -----	.97149, 208°.7 -----	
" -----	" -----	.97087, 209°.2 -----	
" -----	" -----	.96192 } 218° -----	
" -----	" -----	.96177 } -----	
" -----	" -----	.96063 } 219°.8 -----	
" -----	" -----	.96032 } -----	
Metanitrotoluene -----	" -----	1.168, 22° -----	Beilstein and Kuhlberg. J. 22, 403.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Metanitrotoluene	$C_6H_4 \cdot CH_3 \cdot NO_2$	1.01158	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubek. Z. P. C. 1, 655.
"	"	1.01128	
"	"	.98775	
"	"	.98737	
"	"	.97227	
"	"	.97189	
"	"	.96027	
"	"	.96008	
"	"	.95099	
"	"	.95084	
"	"	.94984, 227°.5	
"	"	.94933	
"	"	.94914	
Paranitrotoluene	"	1.00668, 177°.5	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubek. Z. P. C. 1, 655.
"	"	1.00467, 178°.5	
"	"	.98378	
"	"	.98364	
"	"	.96812, 213°	
"	"	.95455, 225°	
"	"	.94531	
"	"	.94513	
"	"	.94342, 239°	
Dinitrotoluene	$C_6H_3 \cdot CH_3 (NO_2)_2$	1.3208, 70°.5	Schiff. A. C. P. 223, 247.
Nitroöthoxylyene	$C_6H_3 (CH_3)_2 NO_2$	1.139, 20°	Jacobsen. Ber. 17, 160.
"	"	1.147, 15°	Noelting and Forel. Ber. 18, 2671.
Nitrometaxylyene. 1.3.2	"	1.126, 17°.5	Tawildarow. Z. C. 13, 418.
"	"	1.126, 24°.5	Beilstein and Kuhlberg.
"	"	1.112, 15°	Grevingk. Ber. 17, 2430.
"	1.3.4	1.124, 25°	Beilstein and Kuhlberg.
"	"	1.135, 15°	Grevingk. Ber. 17, 2429.
"	"	.98667, 176°	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubek. Z. P. C. 1, 655.
"	"	.98254, 179°.5	
"	"	.98057, 182°	
"	"	.97535, 186°	
"	"	.95631	
"	"	.95642	
"	"	.94078, 218°	
"	"	.92964	
"	"	.92945	
"	"	.91794	
"	"	.91823	
"	"	.91634, 244°	
Nitroparaxylyene	"	1.132, 15°	Noelting and Forel. Ber. 18, 2680.
Nitrocymene	$C_{10}H_{13} \cdot NO_2$	1.0385, 18°	Landolph. C. C. 4, 596.
Dinitrocymene	$C_{10}H_{12} \cdot (NO_2)_2$	1.206, 18°.5	" "
"	"	1.204, 21°	
Nitronaphthalene	$C_{10}H_7 \cdot NO_2$	1.321	Schröder. Ber. 12, 1611.
"	"	1.341	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Nitronaphthalene -----	$C_{10}H_7.N O_2$ -----	1.2226, 61°.5--	Schiff. A. C. P. 223, 247.
Orthonitrophenol -----	$C_6H_4.O H. N O_2$ ---	1.443 } 4° -- {	Schröder. Ber. 12, 561.
" -----	" -----	1.451 } 4° -- {	
" -----	" -----	1.2945, 45°.2--	Schiff. A. C. P. 223, 247.
Paranitrophenol -----	" -----	1.467 } 4° -- {	Schröder. Ber. 12, 561.
" -----	" -----	1.469 } 4° -- {	
" -----	" -----	1.2809, 114° --	Schiff. A. C. P. 223, 247.
Trinitrophenol, or picric acid.	$C_6H_2.O H. (N O_2)_3$ ---	1.813 -----	Rüdorff. Ber. 12, 251.
" " -----	" -----	1.750 } 4° -- {	Schröder. Ber. 12, 561.
" " -----	" -----	1.777 } 4° -- {	
Methyl orthonitrophenate	$C_6H_4.O C H_3. N O_2$ ---	1.268, 20° ----	Post and Mehrrens. Ber. 8, 1552.
Methyl paranitrophenate	" -----	1.233, 20° ----	" "
Methyl α dinitrophenate	$C_6H_3.O C H_3. (N O_2)_2$ ---	1.341, 20° ----	" "
Methyl β dinitrophenate	" -----	1.319, 20° ----	" "
Methyl trinitrophenate	$C_6H_2.O C H_3. (N O_2)_3$ ---	1.408, 20° ----	" "
Orthonitrobenzoic acid	$C_6H_4.C O O H. N O_2$ ---	1.5588 -----	Post and Frerichs. Ber. 8, 1549.
" " -----	" -----	1.574 } 4° -- {	Schröder. Ber. 12, 1611.
" " -----	" -----	1.576 } 4° -- {	
Metanitrobenzoic acid	" -----	1.4721 -----	Post and Frerichs. Ber. 8, 1549.
" " -----	" -----	1.492 } 4° -- {	Schröder. Ber. 12, 1611.
" " -----	" -----	1.496 } 4° -- {	
Paranitrobenzoic acid	" -----	1.5804 -----	Post and Frerichs. Ber. 8, 1549.
Nitroanisol -----	$C_6H_4.O C H_3. N O_2$ ---	1.249, 26° ----	Brunck. J. 20, 619.
Orthonitroisobutylanisol	$C_6H_4.O C_4H_9. N O_2$ ---	1.1046, 20° ----	Riess. Z. C. 14, 39.
Paranitroisobutylanisol	" -----	1.1361, 20° ----	" "
Metanitriline	$C_6H_4.H_2 N. N O_2$ ---	1.430, 4° ----	Schröder. Ber. 12, 561.
Paranitriline	" -----	1.415 } 4° ----	" "
" -----	" -----	1.433 } 4° ----	

4th. Miscellaneous Nitrates, Nitrites, and Nitro-Compounds.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Allyl nitrite -----	$C_3 H_5 \cdot N O_2$ -----	.9546, 0° -----	Bertoni. G. C. I. 15, 368.
Allyl nitrate -----	$C_3 H_5 \cdot N O_3$ -----	1.09, 10° -----	Henry. B. S. C. 18, 232.
Ethylene nitrosonitrate --	$C_2 H_4 \cdot N O_2 \cdot N O_3$ --	1.472 -----	Kekulé. Ber. 2, 329.
Ethylene mononitrate ----	$C_2 H_4 \cdot O H \cdot N O_3$ ----	1.31, 11° ----	Henry. Ann. (4), 27, 243.
Ethylene dinitrate -----	$C_2 H_4 (N O_3)_2$ -----	1.4837, 8° -----	" "
" " -----	" " -----	1.48 -----	Champion. Z. C. 14, 470.
α Propylene dinitrite ----	$C_3 H_6 (N O_2)_2$ ----	1.144, 0° ----	Bertoni. G. C. I. 16, 512.
Propylene dinitrate -----	$C_3 H_6 (N O_3)_2$ -----	1.335, 5° -----	Henry. Ann. (4), 27, 243.
Ethylene acetate -----	$C_2 H_4 \cdot C_2 H_3 O_2 \cdot N O_3$ -----	1.29, 18° -----	" "
Glyceryl trinitrite -----	$C_3 H_5 (N O_2)_3$ -----	1.291, 15°.5 -----	Masson. Ber. 16, 1699.
Nitrolactic acid -----	$C_3 H_5 N O_5$ -----	1.35, 12°.8 -----	Henry. Ann. (4), 28, 415.
Ethyl nitroglycollate ----	$C_4 H_7 N O_5$ ----	1.2112, 15°.2 ----	" "
Ethyl nitrolactate -----	$C_5 H_9 N O_6$ -----	1.1534, 13° -----	" "
Ethyl nitromalonate -----	$C_7 H_{11} N O_5$ -----	1.149, 15° -----	Conrad and Bischoff. Ber. 13, 599.
Ethyl nitrotartronate ----	$C_7 H_{11} N O_7$ ----	1.2778, 16° ----	Henry. Ann. (4), 28, 415.
Ethyl nitromalate -----	$C_8 H_{13} N O_7$ -----	1.2094, 16° -----	" "
Nitroglycerine -----	$C_3 H_5 N_3 O_9$ -----	1.595 } 15° -----	De Vrij. J. 8, 626.
" -----	" -----	1.600 } -----	"
" -----	" -----	1.5958 -----	Liebe. J. 13, 453.
" -----	" -----	1.60 -----	Sobrero. J. 13, 453.
" -----	" -----	1.60 -----	Champion. Z. C. 14, 350.
" -----	" -----	1.6, 15° -----	Kern. C. N. 31, 153.
" -----	" -----	1.735, s. -----	Beckerhins. J. R. C. 4, 148.
" -----	" -----	1.599, l. -----	"
" -----	" -----	1.601, 14°.5 -----	Hay and Masson. J. C. S. 48, 742.
Nitromannite -----	$C_6 H_8 N_6 O_{18}$ -----	1.604, 0°, cryst. -----	} Sokoloff. Ber. 12, 698.
" -----	" -----	1.446 -----	
" -----	" -----	1.503 -----	
" -----	" -----	1.537 -----	
Trinitrolactose -----	$C_{12} H_{19} N_3 O_{17}$ -----	1.479, 0° -----	Gé. Ber. 15, 2239.
Pentanitrolactose -----	$C_{12} H_{17} N_5 O_{21}$ -----	1.684, 0° -----	" "
Acetonitrose -----	$C_{14} H_{19} N O_{12}$ -----	1.3487, 18° -----	Colley. B. S. C. 19, 406.
Acetoethyl nitrate -----	$C_6 H_{14} N_2 O_7$ -----	1.0451, 19° -----	Nadler. J. 13, 403.
Derivative of menthol --	$C_{10} H_{19} N O_2$ -----	1.061, 15° -----	Moriya. J. C. S. 39, 77.

5th. Miscellaneous Amido-Compounds.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethylhydroxylamine-----	$N H. O H. C_2 H_5$ ----	.8827, 7°.5----	Gürke. Ber. 14, 258.
Ethylenediamine hydrate-----	$(N H_2)_2 \cdot C_2 H_4 \cdot H_2 O$ ----	.970, 15°-----	Rhousopolos and Meyer. J. C. S. 42, 940.
Oxypropylpropylamine --	$N H. C_3 H_7. C_3 H_6 O H$ ----	.9018, 18°----	Liebermann and Paal. Ber. 16, 523.
Oxyisoamylamine -----	$N H_2. C_5 H_{11} O$ -----	.9265, 14°-----	Radziszewski and Schramm. Ber. 17, 838.
Dioxyisoamylamine-----	$N H. (C_5 H_{11} O)_2$ -----	.9500, 14°-----	" "
Trioxamylamine -----	$N (C_5 H_{11} O)_3$ -----	.879, 22°-----	J. Erdmann. J. 17, 419.
Formamide -----	$N H_2. C O H$ -----	1.1462, 19°----	Gladstone. Bei. 9, 249.
Methylformamide -----	$N H. C H_3. C O H$ ----	1.011, 19°----	Linnemann. J. 22, 601.
Ethylformamide-----	$N H. C_2 H_5. C O H$ ----	.967, 2°-----	Wurtz. J. 7, 567.
"-----	"-----	.952, 21°-----	Linnemann. J. 22, 602.
Diethylformamide -----	$N (C_2 H_5)_2. C O H$ ----	.908, 19°-----	" "
Acetamide -----	$N H_2. C_2 H_3 O$ -----	1.11 } 14°-----	Mendius. B. D. Z.
"-----	"-----	1.13 }	
"-----	"-----	1.159, 4°-----	Schröder. Ber. 12, 561.
Ethylacetamide -----	$N H. C_2 H_5. C_2 H_3 O$ ----	.942, 4°.5----	Wurtz. J. 7, 566.
Ethyldiacetamide-----	$N. C_2 H_5. (C_2 H_3 O)_2$ ----	1.0092, 20°----	Wurtz. Ann. (2), 42, 55.
Dimethylacetamide -----	$N (C H_3)_2. C_2 H_3 O$ ----	.9405, 20°----	Franchimont. R. T. C. 2, 329.
Diethylacetamide-----	$N. (C_2 H_5)_2. C_2 H_3 O$ ----	.9248, 8°.5----	Wallach and Kamensky. A. C. P. 214, 235.
Propionamide -----	$N H_2. C_3 H_5 O$ -----	1.030 } 4°-- {	Schröder. Ber. 12, 561.
"-----	"-----	1.037 }	
Amidoacetic acid, or gly- cocoll.	$C_2 H_5 N O_2$ -----	1.1607 -----	Curtius. B. S. C. 39, 169.
Ethyl diethylglycocollate-	$C_8 H_{17} N O_2$ -----	.919, 15°-----	Kraut. J. R. C. 4, 198.
Amidocaproic acid, or leu- cine.	$C_6 H_{13} N O_2$ -----	1.293, 18°----	Engel and Vilmain. B. S. C. 24, 279.
" " "	"-----	1.282 -----	Lippmann. Ber. 17, 2837.
Oxamide-----	$C_2 H_4 N_2 O_4$ -----	1.627 }	Schröder. Ber. 12, 561.
"-----	"-----	1.657 }	
"-----	"-----	1.667 }	
Dimethyloxamide -----	$C_4 H_8 N_2 O_2$ -----	1.281 }	Schröder. Ber. 12, 1611.
"-----	"-----	1.307 }	
Diethyloxamide -----	$C_6 H_{12} N_2 O_2$ -----	1.164 }	" "
"-----	"-----	1.173 }	
Asparagine -----	$C_4 H_8 N_2 O_3 \cdot H_2 O$ ----	1.519, 14°----	Watts' Dictionary.
"-----	"-----	1.552 -----	Rüdorff. Ber. 12, 252.
Amidosuccinic, or aspartic acid. " "-----	$C_4 H_7 N O_4$ -----	1.6613, active- }	Pasteur. J. 4, 389.
"-----	"-----	1.6632, inactive }	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Allylsuccinimide -----	$C_7 H_9 N O_2$ -----	1.1543, 0° --	Moiné. J. C. S. 52, 489.
“ -----	“ -----	1.1432, 12° --	
“ -----	“ -----	1.1112, 50° --	
“ -----	“ -----	1.0677, 100° --	
Ethyl amidoacetacetate --	$C_6 H_{11} N O_2$ -----	1.014, 30° -----	Duisberg. Ber. 15, 1886.
Ethylamidopropiopropio- nate.	$C_8 H_{15} N O_2$ -----	.9774, 15° -----	Israel. A. C. P. 231, 197.
Mucamide -----	$C_6 H_{12} N_2 O_6$ -----	1.589, 13°.5----	Malaguti. C. R. 22, 854.
Benzamide -----	$N H_2 \cdot C_7 H_5 O$ -----	1.338 } 4° -- {	Schröder. Ber. 12, 1611.
“ -----	“ -----	1.344 } -----	
Amidobenzoic acid -----	$N H_2 \cdot C_7 H_5 O_2$ -----	1.506 } 4° -----	“ “
“ -----	“ -----	1.515 } -----	
Amidomethylphenol -----	$C_7 H_9 N O$ -----	1.108, 26° -----	Brunck. J. 20, 620.
Dimethylanisidine -----	$C_9 H_{13} N O$ -----	1.016, 23° -----	Mühlhäuser. A. C. P. 207, 249.
Ethyl orthoamidophenetol	$C_{10} H_{15} N O$ -----	1.021, 18°.3----	Förster. J. P. C. (2), 21, 347.
Methylformanilide -----	$C_8 H_9 N O$ -----	1.097, 18° -----	Pictet and Crépieux. Ber. 21, 1106.
Ethylformanilide -----	$C_9 H_{11} N O$ -----	1.063, 16° -----	“ “
Propylformanilide -----	$C_{10} H_{13} N O$ -----	1.044, 16° -----	“ “
Isoamylformanilide -----	$C_{12} H_{17} N O$ -----	1.004, 16° -----	“ “
Acetanilide -----	$C_8 H_9 N O$ -----	1.099, 10°.5----	Williams. J. 17, 424.
“ -----	“ -----	1.205 } 4° -- {	Schröder. Ber. 12, 1611.
“ -----	“ -----	1.216 } -----	
Benzanilide -----	$C_{13} H_{11} N O$ -----	1.306 } 4° -----	“ “
“ -----	“ -----	1.321 } -----	
Oxethenaniline -----	$C_8 H_{11} N O$ -----	1.11, 0° -----	Demole. J. C. S. (2), 12, 77.
α Ethylbenzhydroxamic acid.	$C_9 H_{11} N O_2$ -----	1.209 -----	Gürke. Ber. 14, 258.
β Ethylbenzhydroxamic acid.	“ -----	1.185 -----	Gürke. Ber. 14, 259.
Ethyl ethylbenzhydroxa- mate.	$C_{11} H_{15} N O_2$ -----	1.0258, 17° ----	Gürke. Ber. 14, 257.
Ethyl α dibenzhydroxa- mate.	$C_{16} H_{15} N O_3$ -----	1.2433, 18°.4----	Gürke. Ber. 14, 258.
Ethyl β dibenzhydroxa- mate.	“ -----	1.2395, 18°.4----	“ “
Tyrosine -----	$C_9 H_{11} N O_3$ -----	1.456 -----	Siber. Ber. 17, 2837.
Carbamide, or urea -----	$C H_4 N_2 O$ -----	1.35 -----	Proust.
“ “ -----	“ -----	1.30, 12° -----	Bödeker. B. D. Z.
“ “ -----	“ -----	1.35 -----	Schabus.
“ “ -----	“ -----	1.323 } 4° -- {	Schröder. Ber. 12, 561.
“ “ -----	“ -----	1.333 } -----	
Ethyl carbamide -----	$C_3 H_8 N_2 O$ -----	1.209 -----	{ Two samples. Leuckart. J. P. C. (2), 21, 11.
“ “ -----	“ -----	1.213, 18° ----	
Diethyl carbamide -----	$C_5 H_{12} N_2 O$ -----	1.040 -----	Schröder. Ber. 13, 1070.
“ “ -----	“ -----	1.043 -----	
Benzyl phenyl carbamide	$C_{14} H_{16} N_2 O$ -----	.9168, 18° -----	Gladstone. Bei. 9, 249.
Ethyl carbamate, or ure- thane.	$C_3 H_7 N O_2$ -----	.9862, 21° -----	Wurtz. J. 7, 565.

6th. Miscellaneous Cyanogen Compounds.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethyl cyanate -----	$C_2 H_5. C N O$ -----	1.1271, 15° ----	Cloëz. J. 10, 386.
Tertiary butyl cyanate ---	$C_4 H_9. C N O$ -----	.8676, 0° -----	Brauner. Ber. 12, 1875.
Cyanaldehyde -----	$C_2 H_3 O C N$ -----	.881, 15° -----	Chautard. C. R. 106, 1168.
Ethyl cyanformate -----	$C_4 H_5 N O_2$ -----	1.0139, 13°.5--	Henry. C. R. 102, 768.
Ethyl cyanacetate -----	$C_5 H_7 N O_2$ -----	1.0664, 13°.5--	" "
Diisobutyryl dicyanide ---	$C_{10} H_{14} N_2 O_2$ -----	.96 -----	Moritz. J. C. S. 40, 13.
Ethylene cyanhydrin ----	$C_2 H_4. O H. C N$ ----	1.0588, 0° ----	Erlenmeyer. A. C. P. 191, 276.
Ethyl acetylcyanacetate ---	$C_7 H_9 N O_3$ -----	1.102, 19° ----	Haller and Held. Ber. 15, 2363.
Ethyl methylacetylcyanacetate.	$C_8 H_{11} N O_3$ -----	.996, 20° -----	Held. B. S. C. 41, 330.
Ethyl ethylacetylcyanacetate.	$C_9 H_{13} N O_3$ -----	.976, 20° -----	" "
Ethoxyacetoneitril -----	$C_4 H_7 N O$ -----	.918, 6° -----	Henry. B. S. C. 20, 186.
" -----	" -----	.9093, 20° ----	Norton and Tscherniak.
Phenoxyacetoneitril -----	$C_8 H_7 N O$ -----	1.09, 17°.5--	Fritzsche. Ber. 12, 2178.
Mandelic nitril -----	" -----	1.124 -----	Völckel. P. A. 62, 444.
Hydroxisovaleronitril ----	$C_5 H_9 N O$ -----	.95612, 0° ----	Lipp. A. C. P. 205, 26.
Hydroxycaprylonitril ----	$C_8 H_{15} N O$ -----	.9048, 17° ----	Erlenmeyer and Sigel. A. C. P. 177, 107.
Triethoxyacetoneitril ----	$C_8 H_{15} N O_3$ -----	1.0030, 15°.5--	Bauer. A. C. P. 229, 163.
Valeracetoneitril -----	$C_{13} H_{24} N_2 O_3$ -----	.79 -----	Schlieper. A. C. P. 49, 19.
Acetoxyacetoneitril -----	$C_4 H_5 N O_2$ -----	1.1003, 13°.5--	Henry. C. R. 102, 768.
Acetoxypropionitril -----	$C_5 H_7 N O_2$ -----	1.077, 13°.5--	" "
Cyanöil -----	$C_6 H_{11} N O$ -----	1.009 -----	Rosignon. A. C. P. 44, 301.

7th. Miscellaneous Compounds.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethyl carbimide-----	$C_3 H_5 N O$ -----	.8981-----	Wurtz. J. 7, 564.
Phenyl carbimide-----	$C_7 H_5 N O$ -----	1.092, 50°-----	Hofmann. P. R. S. 19, 108.
Ethylmethyl acetoxim----	$C_4 H_9 N O$ -----	.9195, 24°-----	Janny. Ber. 15, 2779.
Trimethylene diethylalkin	$C_7 H_{17} N O$ -----	.9199, 4°-----	Berend. Ber. 17, 510.
Tetrethylallylalkin-----	$C_{11} H_{26} N_2 O$ -----	.9002, 4°-----	" "
Methylphenylethylalkin----	$C_9 H_{13} N O$ -----	1.08065, 0°-----	Laun. Ber. 17, 676.
Piperpropylalkin-----	$C_8 H_{17} N O$ -----	.9456, 0°-----	Laun. Ber. 17, 680.
Hydroxypicoline-----	$C_6 H_9 N O$ -----	1.008, 13°-----	Etard. J. C. S. 40, 1046.
Collidine monocarbonic ether.	$C_{11} H_{15} N O_2$ -----	1.0315, 15°-----	R. Michael. A. C. P. 225, 121.
Collidine dicarbonic ether	$C_{14} H_{19} N O_4$ -----	1.087, 15°-----	Hantzsch. Ber. 15, 2913.
Nitroxylpiperidine-----	$C_5 H_{10} N_2 O$ -----	1.0659, 15°.5--	Wertheim. J. 16, 440.
Acetpiperidid-----	$C_7 H_{13} N O$ -----	1.01106, 9°-----	Wallach and Ka- mensky. A. C. P. 214, 238.
Acetylcepellidine-----	$C_{10} H_{19} N O$ -----	.9787, 0°-----	} Dürkopf. Ber. 18, 924.
"-----	"-----	.9660, 21°-----	
Parachinanisol-----	$C_{10} H_9 N O$ -----	1.1665, 0°-----	} Skraup. Ber. 18, ref. 631.
"-----	"-----	1.1542, 20°-----	
"-----	"-----	1.1402, 50°-----	
Base from ethylamine cam- phorate.	$C_{14} H_{24} N_2 O$ -----	1.0177, 15°-----	Wallach and Ka- mensky. A. C. P. 214, 245.
Uric acid-----	$C_5 H_4 N_4 O_3$ -----	1.855-----	} Schröder. Ber. 13, 1070.
"-----	"-----	1.893-----	
Hippuric acid-----	$C_9 H_9 N O_3$ -----	1.308, s.-----	Schabus. J. 3, 410.
Ethyl hippurate-----	$C_{11} H_{13} N O_3$ -----	1.043, 23°, s.---	Stenhouse. A. C. P. 31, 148.
Ethyl glycocholate-----	$C_{28} H_{47} N O_6$ -----	.901-----	Springer. A. C. J. 1, 181.
Indigotine-----	$C_{16} H_{10} N_2 O_2$ -----	1.35-----	Weltzien's "Zu- sammenstellung."
Creatine hydrate-----	$C_4 H_9 N_3 O_2 \cdot H_2 O$ ---	1.34-----	} Watts' Dictionary.
"-----	"-----	1.35-----	
Caffeine-----	$C_8 H_{10} N_4 O_2 \cdot H_2 O$ ---	1.23, 19°-----	Pfaff. Watts' Dict.
Piperine-----	$C_{17} H_{19} N O_3$ -----	1.1931, 18°-----	Wackenroder. Watts' Dict.
Strychnine-----	$C_{21} H_{22} N_2 O_2$ -----	1.359, 18°-----	F. W. Clarke.
"-----	"-----	1.13-----	Blunt. J. C. S. 50, 1047.
Morphine-----	$C_{17} H_{19} N O_3 \cdot H_2 O$ ---	1.317-----	} Schröder. Ber. 13, 1070.
"-----	"-----	1.326-----	
Morphine butyrate-----	$C_{21} H_{27} N O_5$ -----	1.215, 13°-----	Decharme. J. 16, 445.
Morphine oxalate-----	$C_{36} H_{38} N_2 O_9 \cdot 2 H_2 O$	1.286, 15°-----	" "
Morphine lactate-----	$C_{20} H_{25} N O_6$ -----	1.3574-----	" "
Codeine-----	$C_{18} H_{21} N O_3 \cdot N_2 O$ ---	1.300-----	Hunt. J. 8, 566.
"-----	"-----	1.311-----	} Schröder. Ber. 13, 1070.
"-----	"-----	1.323-----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Thebaine -----	$C_{19}H_{21}NO_3$ -----	1.282 -----	Schröder. Ber. 13, 1070.
" -----	" -----	1.305 -----	
Laudanine -----	$C_{20}H_{25}NO_4$ -----	1.255 -----	" "
" -----	" -----	1.256 -----	
Papaverine -----	$C_{21}H_{21}NO_4$ -----	1.308 -----	" "
" -----	" -----	1.317 -----	
" -----	" -----	1.337 -----	
Cryptopine -----	$C_{21}H_{23}NO_5$ -----	1.351 -----	" "
Narcotine -----	$C_{22}H_{23}NO_7$ -----	1.374 -----	" "
" -----	" -----	1.391 -----	
" -----	" -----	1.395 -----	
Pelletierine -----	$C_8H_{15}NO$ -----	.988, 0° -----	Tanret. Ber. 13, 1031.
Paraffinic acid -----	$C_{13}H_{26}NO_5$ -----	1.14, 15° -----	Champion and Pel- let. B.S.C. 18, 247.

XLIX. CHLORIDES, BROMIDES, AND IODIDES OF CARBON.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Carbon tetrachloride -----	CCl_4 -----	1.599 -----	Regnault. Ann. (2), 71, 383.
" " -----	" -----	1.56 -----	Kolbe. A. C. P. 54, 146.
" " -----	" -----	1.62983, 0° -----	Pierre. Ann. (3), 33, 210.
" " -----	" -----	1.567, 12° -----	Riche.
" " -----	" -----	1.5947, 20° -----	Haagen. P. A. 131, 117.
" " -----	" -----	1.4658, at the boiling p't.	Ramsay. J. C. S. 35, 463.
" " -----	" -----	1.63195, 0° -----	} Thorpe. J. C. S. 37, 199.
" " -----	" -----	1.47999, 76°.74 -----	
" " -----	" -----	1.6084, 9°.5 -----	} Schiff. G. C. I. 13, 177.
" " -----	" -----	1.4802, 75°.6 -----	
" " -----	" -----	1.60500, 15° -----	} Perkin. J. P. C. (2), 32, 523.
" " -----	" -----	1.58873, 25° -----	
Tetrachlorethylene -----	C_2Cl_4 -----	1.619, 20° -----	Regnault. Ann. (2), 71, 353.
" -----	" -----	1.6490, 0° -----	Pierre. Ann. (3), 33, 230.
" -----	" -----	1.612, 10° -----	Geuther. A. C. P. 107, 212.
" -----	" -----	1.6595, 0° -----	Bourgoin. Ber. 8, 548.
" -----	" -----	1.6190, 20° -----	Brühl. Bei. 4, 780.
" -----	" -----	1.6312, 9°.4 -----	} Schiff. G. C. I. 13, 177.
" -----	" -----	1.4434 -----	
" -----	" -----	1.4489 -----	
Hexchlorethane -----	C_2Cl_6 -----	1.619 -----	Regnault. Ann. (2), 71, 374.
" -----	" -----	2.011 -----	Schröder. Ber. 13, 1070.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Octochloropropane-----	$C_3 Cl_8$ -----	1.860-----	Cahours. J. 3, 496.
Hexchlorobenzene-----	$C_6 Cl_6$ -----	1.585, 228°-----	Jungfleisch. J. 20,
“-----	“-----	1.437, 317°-----	36.
“-----	“-----	1.569, 236°-----	M. 226°. B. 326°.
“-----	“-----	1.5191, 266°-----	Jungfleisch. J. 21,
“-----	“-----	1.4624, 306°-----	354.
Thiocarbonyl chloride-----	$C S Cl_2$ -----	1.46-----	Kolbe. A. C. P. 45,
“-----	“-----	1.5498, 0°-----	41.
“-----	“-----	1.5339, 11°-----	Claesson. Lund
“-----	“-----	1.5241, 17°-----	Arsskrift 1884-'5.
“-----	“-----	1.05085, 15°-----	Billeter and Strohl.
Carbon tetrabromide-----	$C Br_4$ -----	3.42, 14°-----	Ber. 21, 102.
Carbon sulphobromide-----	$C S_2 Br_4$ -----	2.88, 15°-----	Bolas and Groves.
Bromo-trichlormethane-----	$C Cl_3 Br$ -----	2.058, 0°-----	J. C. S. 24, 780.
“-----	“-----	2.017, 19°.5-----	Hell and Urech.
“-----	“-----	1.842, 100°-----	Ber. 16, 1148.
“-----	“-----	2.05496, 0°-----	Paterno. J. P. C. (2),
“-----	“-----	1.82446, 104°.07-----	
Dibrom-tetrachlorethane-----	$C_2 Cl_4 Br_2$ -----	2.3, 21°-----	5, 99.
Dibrom-hexchloropropane-----	$C_3 Cl_6 Br_2$ -----	1.974-----	Thorpe. J. C. S. 37,
Carbon tetriodide-----	$C I_4$ -----	4.32, 20°.2-----	371.
			Malaguti. Ann. (3),
			16, 24.
			Cahours.
			Gustavson. C. R. 78,
			1126.

L. COMPOUNDS CONTAINING C, CL, AND O.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Carbonyl chloride-----	$C O Cl_2$ -----	1.432, 0°-----	{ Emmerling and
“-----	“-----	1.392, 18°.6-----	
Trichloracetyl chloride-----	$C_2 Cl_4 O$ -----	1.603, 18°-----	Lengyel. Z. C.
“-----	“-----	1.6564, 0°-----	13, 189.
“-----	“-----	1.44517, 118°-----	Malaguti. Ann. (3),
Trichloracetic anhydride-----	$C_4 Cl_6 O_3$ -----	1.6908, 20°-----	16, 9.
Tetrachlormethyl formate-----	$C_2 Cl_4 O_2$ -----	1.724, 12°-----	{ Thorpe. J. C. S.
“-----	“-----	1.6525, 14°-----	
Hexchlorethyl formate-----	$C_3 Cl_6 O_2$ -----	1.705, 18°-----	37, 371.
Hexchlormethyl acetate-----	“-----	1.691, 18°-----	Anthoine. J. Ph.
Perchlorethyl acetate-----	$C_4 Cl_8 O_2$ -----	1.79, 25°-----	Ch. (5), 8, 417.
“-----	“-----	1.78, 22°-----	Cahours. J. 1, 676.
			Hentschel. J. P. C.
			(2), 36, 99.
			Cloëz. Ann. (3), 17,
			299.
			Cloëz. Ann. (3), 17,
			312.
			Léblanc. Ann. (3),
			10, 202.
			Léblanc. Ann. (3),
			10, 208.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Hexchlormethyl oxide	$C_2 Cl_6 O$	1.594	Regnault. Ann. (2), 71, 403.
Perchlorethyl oxide	$C_4 Cl_{10} O$	1.9, 14°.5	Malaguti. Ann. (3), 16, 14.
Hexchloracetone	$C_3 Cl_6 O$	1.75, 10°	Plantamour.
"	"	1.744, 12°	Cloëz. Ann. (6), 9, 145.
Chloroxethose	$C_4 Cl_6 O$	1.654, 21°	Malaguti. Ann. (3), 16, 20.
Derivative of sodium citrate.	$C_5 Cl_{10} O_2$	1.66	Watts' Dictionary.
By action of $P Cl_5$ on succinyl chloride.	$C_4 Cl_6 O$	1.634	Kauder. J. P. C. (2), 28, 191.

LI. COMPOUNDS CONTAINING C, H, AND CL.

1st. Chlorides of the Paraffin Series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl chloride	$C H_3 Cl$	.99145, 25°.7	Vincent and Delachanal. Bei. 3, 332.
"	"	.95231, 0°	
"	"	.92880, 13°.4	
"	"	.91969, 17°.9	
"	"	.90875, 23°.8	
"	"	.89638, 30°.2	
"	"	.97886, 39°	Thénard.
Ethyl chloride	$C_2 H_5 Cl$	.874, 5°	
"	"	.92138, 0°	
"	"	.9253, 0°	
"	"	.9176, 8°	Pierre. C. R. 27, 213.
"	"	.8510, 12°	Darling. J. 21, 328.
"	"	.92295, 15°	Linnemann. A.C.P. 160, 195.
"	"	.91708, 25°	Ramsay. J. C. S. 35, 463.
Propyl chloride	$C_3 H_7 Cl$	.9156, 0°	Perkin. J. P. C. (2), 31, 481.
"	"	.8918, 19°.75	
"	"	.8671, 39°	Pierre and Puchot. Ann. (4), 22, 281.
"	"	.9160, 18°	
"	"	.8959, 19°	Linnemann. A.C.P. 161, 38 and 39.
"	"	.8877, 14°	De Heen. Bei. 5, 105.
"	"	.9123, 0°	Zander. A.C.P. 214, 181.
"	"	.8536, 46°.5	
"	"	.8561, 46°	Schiff. G. C. I. 13, 177.
"	"	.8898, 20°	Brühl. Bei. 4, 778.
"	"	.89296, 15°	Perkin. J. P. C. (2), 31, 481.
"	"	.88125, 25°	
Isopropyl chloride	"	.874, 10°	Linnemann.
"	"	.8722, 14°	Linnemann. A. C. P. 161, 18.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Isopropyl chloride	C_3H_7Cl	.8825, 0°	Zander. A.C.P. 214, 181.
"	"	.8326, 36°.5	
"	"	.86884, 15°	
"	"	.85750, 25°	Perkin. J. P. C. (2), 31, 481.
Butyl chloride	C_4H_9Cl	.880	Gerhard. J. 15, 409.
"	"	.9074, 0°	Lieben and Rossi. A. C. P. 158, 137.
"	"	.8874, 20°	
"	"	.8972, 14°	Linnemann. Ann. (4), 27, 268.
"	"	.8094, bp	Ramsay. J. C. S. 35, 463.
"	"	.8794, 14°	De Heen. Bei. 5, 105.
Isobutyl chloride	"	.8953, 0°	Pierre and Puchot. Ann. (4), 22, 310.
"	"	.8651, 27°.8	
"	"	.8281, 59°	Linnemann. A. C. P. 162, 1.
"	"	.8798, 15°	
"	"	.8626, 19°	Gladstone. Bei. 9, 249.
"	"	.8073, 68°	Schiff. Bei. 9, 559.
"	"	.88356, 15°	Perkin. J. P. C. (2), 31, 481.
"	"	.87393, 25°	
Trimethylcarbyl chloride	"	.8658, 0°	Puchot. Ann. (5), 28, 549.
"	"	.84712, 15°	Perkin. J. P. C. (2), 31, 481.
"	"	.83683, 25°	
Normal pentyl chloride	$C_5H_{11}Cl$	.9013, 0°	Lieben and Rossi. A. C. P. 159, 70.
"	"	.8834, 20°	
"	"	.8680, 40°	Lachowicz. A. C. P. 220, 191.
"	"	.8732, 20°	
Amyl chloride	"	.8859, 0°	Kopp. A. C. P. 95, 307.
"	"	.8625, 25°.1	
"	"	.89584, 0°	Pierre. C. R. 27, 213.
"	"	.8750	{ Two products. Schorlemmer. J. 19, 527.
"	"	.8777	
"	"	.7801, bp	Ramsay. J. S. C. 35, 463.
"	"	.8716, 14°	De Heen. Bei. 5, 105.
"	"	.8703, 20°	Lachowicz. A. C. P. 220, 190.
"	"	.7903, 99°.5	Schiff. Ber. 19, 560.
"	"	.88006, 15°	Perkin. J. P. C. (2), 31, 481.
"	"	.87164, 25°	
"	"	.886	Le Bel. B. S. C. 25, 546.
"	"	.8928, 0°	Balbiano. Ber. 9, 1437.
Methylpropylcarbyl chloride.	"	.912, 0°	{ Wagner and Saytzeff. A. C. P. 179, 321.
"	"	.891, 21°	
Diethylcarbyl chloride	"	.916, 0°	{ " " "
"	"	.895, 21°	
Dimethylethylcarbyl chloride.	"	.883, 0°	Wurtz. J. 16, 516.
"	"	.889, 0°	{ Wischnegradsky. A.C.P. 190, 334-336.
"	"	.870, 19°	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Dimethylethylcarbyl chloride. " "	$C_5 H_{11} Cl$ -----	.87086, 15° } .86219, 25° }	Perkin. J. P. C. (2), 31, 481.
Hexyl chloride -----	$C_6 H_{13} Cl$ -----	.892, 16° -----	Pelouze and Cahours. J. 16, 525.
" " -----	" -----	.892, 23° -----	Geibel and Buff. J. 21, 336.
" " -----	" -----	.895, 13° -----	Cahours and Demarcay. C. R. 80, 1570.
Secondary hexyl chloride -----	" -----	.871, 24° -----	Domac. Ber. 14, 1712.
Chloride from tetramethylethane. " "	" -----	.8943, 14° --	Schorlemmer. J. 20, 567.
" " " " -----	" -----	.8874, 22° --	
" " " " -----	" -----	.8759, 34° --	
Dimethylisopropylcarbyl chloride. " "	" -----	.8966, 0° -----	Pawlow. A. C. P. 196, 122.
Pinacolyl chloride -----	" -----	.8784, 19° -----	Friedel and Silva. J. C. S. (2), 11, 488.
		.8991, 0° -----	
Heptyl chloride -----	$C_7 H_{15} Cl$ -----	.9983, 15° -----	Petersen. J. 14, 613.
" " -----	" -----	.890, 20° -----	Pelouze and Cahours. J. 15, 386.
" " -----	" -----	.8737, 18°.5 } .8725, 20° -- }	Two preparations. Schorlemmer. A. C. P. 136, 257.
" " -----	" -----	.8965, 19° -----	
" " -----	" -----	.891, 19° -----	Schorlemmer.
" " -----	" -----	.881, 16° -----	Cross. J. C. S. 32, 123.
Isoheptyl chloride -----	" -----	.8814, 16°.5 } .8780, 18°.5 }	Schorlemmer. A. C. P. 136, 257.
" " -----	" -----	.8757, 22° -- }	
" " -----	" -----	.892, 18° -----	
Octyl chloride -----	$C_8 H_{17} Cl$ -----	.892, 18° -----	Schorlemmer. J. 15, 386.
" " -----	" -----	.895, 16° -----	Pelouze and Cahours. J. 16, 528.
" " -----	" -----	.8802, 16° -----	Zincke. A. C. P. 152, 5.
" " -----	" -----	.850 -----	Cahours and Demarcay. C. R. 80, 1571.
" " -----	" -----	.87857, 15° } .87192, 25° }	Perkin. J. P. C. (2), 31, 481.
" " -----	" -----	.8834, 10°.5 } .8617, 36° -- }	
Isooctyl chloride -----	" -----	.87075, 15° } .86388, 25° }	Perkin. J. P. C. (2), 31, 481.
" " -----	" -----	.899, 16° -----	
Methylhexylcarbyl chloride. " "	$C_9 H_{19} Cl$ -----	.899, 16° -----	Pelouze and Cahours. J. 16, 529.
Nonyl chloride. B. 196° -----	" -----	.8962, 14° -----	Thorpe and Young. A. C. P. 165, 1.
" " -----	" -----	.911, 23° -----	Lemoine. B. S. C. 41, 161.
" " B. 182° -----	" -----	.908, 25°.8 -----	
Decatyl chloride -----	$C_{10} H_{21} Cl$ -----	.908, 19° -----	" "
Dodecatyl chloride -----	$C_{12} H_{25} Cl$ -----	.933, 22° -----	Pelouze and Cahours. J. 16, 530.
Cetyl chloride -----	$C_{16} H_{33} Cl$ -----	.8412, 12° -----	Tüttscheff. J. 13, 406.

2d. Chlorides of the Series $C_n H_{2n} Cl_2$.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methylene chloride -----	$C H_2 Cl_2$ -----	1.344, 18° -----	Regnault. Ann. (2), 71, 378.
“ “ -----	“ -----	1.360, 0° -----	Butlerow. J. 22, 343.
“ “ -----	“ -----	1.377765, 0° -----	} Thorpe. J. C. S. 37, 371.
“ “ -----	“ -----	1.30093, 41°.6 -----	
“ “ -----	“ -----	1.33771, 15° -----	} Perkin. J. P. C. (2). 32, 523.
“ “ -----	“ -----	1.32197, 25° -----	
Ethylene chloride -----	$C_2 H_4 Cl_2$ -----	1.256, 12° -----	Regnault. Ann. (2), 58, 307.
“ “ -----	“ -----	1.247, 18° -----	Liebig. A.C.P. 214.
“ “ -----	“ -----	1.28034, 0° -----	Pierre. C. R. 27, 213.
“ “ -----	“ -----	1.2562, 20° -----	Haagen. P. A. 131, 117.
“ “ -----	“ -----	1.26, 14° -----	Maumené. J. 22, 346.
“ “ -----	“ -----	1.272, 14° -----	Gladstone and Tribe. C. N. 29, 212.
“ “ -----	“ -----	1.1356, 84° -----	Ramsay. J. C. S. 35, 463.
“ “ -----	“ -----	1.28082, 0° -----	} Thorpe. J. C. S. 37, 371.
“ “ -----	“ -----	1.15635, 83°.5 -----	
“ “ -----	“ -----	1.2521, 20° -----	Brühl. A. C. P. 203, 1.
“ “ -----	“ -----	1.1576, 83°.2 -----	Schiff. Ber. 15, 2973.
“ “ -----	“ -----	1.2656, 9°.8 -----	} Schiff. G. C. I. 13, 177.
“ “ -----	“ -----	1.1576, 83°.3 -----	
“ “ -----	“ -----	1.272, 14° -----	Gladstone. Bei. 9, 249.
“ “ -----	“ -----	1.25991, 15° -----	} Perkin. J. P. C. (2), 32, 523.
“ “ -----	“ -----	1.24800, 25° -----	
“ “ -----	“ -----	1.25014, 20° -----	Weegmann. Z. P. C. 2, 218.
Ethylidene chloride -----	“ -----	1.174, 17° -----	Regnault. Ann. (2), 71, 357.
“ “ -----	“ -----	1.24074, 0° -----	Pierre. C. R. 27, 213.
“ “ -----	“ -----	1.189, 4°.3 -----	Geuther. J. 11, 289.
“ “ -----	“ -----	1.198, 6°.5 -----	Darling. J. 21, 329.
“ “ -----	“ -----	1.201, 13° -----	Gladstone and Tribe. C. N. 29, 212.
“ “ -----	“ -----	1.1743, 20° -----	Brühl. A. C. P. 203, 1.
“ “ -----	“ -----	1.1070, 56° -----	Ramsay. J. C. S. 35, 463.
“ “ -----	“ -----	1.20394, 0° -----	} } Two samples. Thorpe. J. C. S. 37, 183 and 371.
“ “ -----	“ -----	1.10923, 59°.9 -----	
“ “ -----	“ -----	1.2049, 0° -----	
“ “ -----	“ -----	1.1895, 9°.8 -----	} Schiff. G. C. I. 13, 177.
“ “ -----	“ -----	1.11425, 56°.7 -----	
“ “ -----	“ -----	1.11555, 56°.5 -----	
“ “ -----	“ -----	1.18450, 15° -----	} Perkin. J. P. C. (2), 32, 523.
“ “ -----	“ -----	1.17120, 25° -----	
“ “ -----	“ -----	1.17503, 20° -----	Weegmann. Z. P. C. 2, 218.
Propylene chloride -----	$C_3 H_6 Cl_2$ -----	1.151 -----	Cahours. J. 3, 496.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Propylene chloride -----	$C_3H_6Cl_2$ -----	1.1656, 14° ---	Linnemann. A. C. P. 161, 18.
“ “ -----	“ -----	1.184, 0° } }	Friedel and Silva. Z. C. 14, 489.
“ “ -----	“ -----	1.155, 25° } }	
“ “ -----	“ -----	1.182, 0° } }	
“ “ -----	“ -----	1.153, 25° } }	
Trimethylene chloride-----	“ -----	1.0470, 97°.5--	Schiff. Bei. 9, 559.
“ “ -----	“ -----	1.201, 15° ----	Reboul. J. C. S. 36, 127.
“ “ -----	“ -----	1.1896, 17°.6--	Freund. Ber. 14, 2270.
Dimethylmethylen chloride. Methylchloracetol.	“ -----	1.117, 0° -----	Friedel.
“ “ -----	“ -----	1.06, 16° -----	Linnemann. A. C. P. 138, 125.
“ “ -----	“ -----	1.0827, 16° ---	Linnemann. A. C. P. 161, 18.
“ “ -----	“ -----	1.1058, 0° --- } }	Friedel and Silva. Z. C. 14, 489.
“ “ -----	“ -----	1.0744, 25° --- } }	
“ “ -----	“ -----	1.1125, 0° --- } }	
“ “ -----	“ -----	1.0818, 25° --- } }	
“ “ -----	“ -----	1.09620 } 15°	Perkin. J. P. C. (2), 32, 523.
“ “ -----	“ -----	1.09657 } 15°	
“ “ -----	“ -----	1.08430 } 25°	
“ “ -----	“ -----	1.08476 } 25°	
Propylidene chloride-----	“ -----	1.143, 10° ----	Reboul. C. R. 82, 378.
Isobutylene chloride -----	$C_4H_8Cl_2$ -----	1.112, 18° ----	Kolbe. J. 2, 338.
“ “ -----	“ -----	1.0953, 0° --- } }	Kopp. A. C. P. 95, 307.
“ “ -----	“ -----	1.0751, 20°.7 } }	
Isobutylidene chloride ---	“ -----	1.0111, 12° ---	Oeconomides. Ber. 14, 1201.
Amylene chloride-----	$C_5H_{10}Cl_2$ -----	1.058, 9° -----	Guthrie. J. 14, 665.
“ “ -----	“ -----	1.2219, 0° -----	Bauer. J. 19, 531.
Isoamylidene chloride-----	“ -----	1.05, 24° -----	Ebersbach. J. 11, 297.
Chloramyl chloride -----	“ -----	1.194, 0° -----	Buff. J. 21, 333.
Hexylene chloride. B. 180°	$C_6H_{12}Cl_2$ -----	1.087, 20° ----	Pelouze and Cahours. J. 16, 525.
“ “ B. 163°	“ -----	1.0527, 11° ---	Henry. C. R. 97, 260.
Heptylene chloride -----	$C_7H_{14}Cl_2$ -----	1.0295, 10° ---	Husemann. B. D. Z.

3d. Miscellaneous Non-Aromatic Chlorides.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Chloroform -----	C H Cl_3 -----	1.48, 18° -----	Liebig. A. C. P. 1, 199.
"-----	"-----	1.491, 17° -----	Regnault. Ann. (2), 71, 381.
"-----	"-----	1.493 } -----	Swan. J. 1, 681.
"-----	"-----	1.497 } -----	
"-----	"-----	1.413 -----	Soubeiran and Mialhe. J. 2, 408.
"-----	"-----	1.496, 12° -----	
"-----	"-----	1.500, 15°.5-----	Gregory. J. 3, 454.
"-----	"-----	1.52523, 0° -----	Pierre. C. R. 27, 213.
"-----	"-----	1.512, 12° -----	Schiff. A. C. P. 107, 63.
"-----	"-----	1.49 -----	Flückiger.
"-----	"-----	1.472, 16°.5-----	Geuther.
"-----	"-----	1.507, 17° -----	Flückiger. Z. A. C. 5, 302.
"-----	"-----	1.502 -----	Rump. C. C. (3), 6, 34.
"-----	"-----	1.500, 15° -----	Remys. J. C. S. (2), 13, 439.
"-----	"-----	1.3954, 63° -----	Ramsay. J. C. S. 35, 463.
"-----	"-----	1.52657, 0° -----	Thorpe. J. C. S. 37, 371.
"-----	"-----	1.40877, 61°.2-----	
"-----	"-----	1.4018 } 63°-----	Schiff. Ber. 14, 2763-2766.
"-----	"-----	1.40814 } -----	
"-----	"-----	1.4081, 60°.6-----	Schiff. Ber. 15, 2972.
"-----	"-----	1.49089, 29° -----	Nasini. G. C. I. 13, 135.
"-----	"-----	1.5039, 11°.8 } -----	Schiff. G. C. I. 13, 177.
"-----	"-----	1.4081, 60°.9 } -----	
"-----	"-----	1.48978, 18°.58-----	{ With intermediate values. Drecker. P.A. (2), 20, 870.
"-----	"-----	1.45695, 35°.86-----	
"-----	"-----	1.50027 } 15°-----	{ Perkin. J. P. C. (2), 32, 523.
"-----	"-----	1.50085 } -----	
"-----	"-----	1.48432 } 25°-----	
"-----	"-----	1.48492 } -----	
Trichlorethane -----	$\text{C H}_3 \cdot \text{C Cl}_3$ -----	1.372, 16° -----	Regnault. Ann. (2), 71, 364.
"-----	"-----	1.34651, 0° -----	Pierre. C. R. 27, 213.
"-----	"-----	1.32466, 15° -----	Perkin. J. P. C. (2), 32, 523.
"-----	"-----	1.31144, 25° -----	
Chlorethylene dichloride -----	$\text{C H}_2 \text{ Cl} \cdot \text{C H Cl}_2$ -----	1.422, 17° -----	Regnault. Ann. (2), 69, 153.
"-----	"-----	1.42234, 0° -----	Pierre. C. R. 27, 213.
"-----	"-----	1.4577, 9°.4-----	{ Schiff. G. C. I. 13, 177.
"-----	"-----	1.2943 } -----	
"-----	"-----	1.2946 } 113°.5-----	
"-----	"-----	1.2947 } -----	
"-----	"-----	1.391 -----	Delacre. Bull. Acad. Belg. (3), 13, 250.
"-----	"-----	1.45527, 15° -----	Perkin. J. P. C. (2), 32, 523.
"-----	"-----	1.44303, 25° -----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Tetrachlorethane. B. 102°	$C H_2 Cl. C Cl_3$ -----	1.530, 17° ----	Regnault. Ann. (2), 71, 366.
“ B. 135°	“ -----	1.576, 19° ----	Regnault. Ann. (2), 68, 162.
“ -----	“ -----	1.61158, 0° ----	Pierre. C. R. 27, 213.
Acetylene tetrachloride --	$C H Cl_2. C H Cl_2$ ----	1.614, 0° ----	Paterno and Pisati. Z. C. 14, 385.
“ “ --	“ ----	1.578, 24°.3 } ----	
“ “ --	“ ----	1.522, 100°.1 } ----	
Pentachlorethane-----	$C H Cl_2. C Cl_3$ -----	1.644 -----	Regnault. Ann. (2), 71, 368.
“ -----	“ -----	1.66267, 0° ----	Pierre. C. R. 27, 213.
“ -----	“ -----	1.71, 0° ----	Paterno. Z. C. 12, 245.
“ -----	“ -----	1.69, 13° ----	
“ -----	“ -----	1.70893, 0° ----	Thorpe. J. C. S. 37, 371.
“ -----	“ -----	1.46052, 159°.1 } ----	
Dichlorethylene -----	$C_2 H_2 Cl_2$ -----	1.250, 15° ----	Regnault. Ann (2), 69, 155.
Trichloropropane -----	$C_3 H_5 Cl_3$ -----	1.347 -----	Cahours. J. 3, 496.
Trichlorhydrin -----	$CH_2Cl. CHCl. CH_2Cl$ ----	1.41, 0° ----	Three separate products. Linnemann. A. C. P. 136, 51.
“ -----	“ -----	1.40, 8° ----	
“ -----	“ -----	1.417, 15° ----	
“ -----	“ -----	1.41, 0° ----	Oppenheim. J. 19, 521.
“ -----	“ -----	1.39805 } 15° ----	Perkin. J. P. C. (2), 32, 523.
“ -----	“ -----	1.39836 } ----	
“ -----	“ -----	1.38753 } 25° ----	
“ -----	“ -----	1.38783 } ----	
Isotrichlorhydrin -----	$CH_2Cl. CH_2. CHCl_2$ ----	1.362, 15° ----	Romburgh. Ber. 14, 1400.
Allylene tetrachloride ----	$C_3 H_4 Cl_4$ -----	1.47, 13° ----	Borsche and Fittig. J. 18, 313.
“ “ -----	“ -----	1.482 -----	Ganswindt. Jena Inaug. Diss. 1873.
“ “ -----	“ -----	1.485 -----	
Tetrachlorglycide -----	“ -----	1.496, 17° ----	Pfeffer and Fittig. J. 18, 504.
Allylidene tetrachloride--	“ -----	1.503, 17°.5----	Hartenstein. J. P. C. (2), 7, 295.
“ “ -----	“ -----	1.522, 15° ----	Romburgh. Ber. 14, 1400.
Tetrachloropropane -----	“ -----	1.548 -----	Cahours. J. 3, 496.
“ -----	“ -----	1.55, s. -----	Berthelot.
Hexachloropropane -----	$C_3 H_2 Cl_6$ -----	1.626 -----	Cahours. J. 3, 496.
Heptachloropropane -----	$C_3 H Cl_7$ -----	1.731 -----	“ “
Chloropropylene -----	$C_3 H_5 Cl$ -----	.918, 9° ----	Linnemann. J. 19, 308.
“ -----	“ -----	.9307, 0° ----	Oppenheim. J. 19, 521.
“ -----	“ -----	.931, 0° ----	Oppenheim. J. 21, 339.
Allyl chloride-----	“ -----	.934, 0° ----	Oppenheim. J. 19, 521.
“ “ -----	“ -----	.9547, 0° ----	Tollens. A. C. P. 156, 155.
“ “ -----	“ -----	.9610, 0° ----	Zander. A. C. P. 214, 181.
“ “ -----	“ -----	.9002, 46° -- }	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Allyl chloride-----	$C_3 H_5 Cl$ -----	.9055 } 44°.8	{ Schiff. G. C. I. 13,
" "-----	"-----	.9058 }	{ 177.
" "-----	"-----	.9379, 20°-----	Brühl. Bei. 4, 780.
" "-----	"-----	.94366, 15°-----	Perkin. J. P. C.
" "-----	"-----	.93228, 25°-----	(2), 32, 523.
Allylidene dichloride-----	$C_3 H_4 Cl_2$ -----	1.170, 24°.5-----	Hübner and Geu-
α Dichlorpropylene. Epi-	"-----	1.21-----	ther. J. 13, 305.
dichlorhydrin. "-----	"-----	1.22, 8°-----	Claus. A. C. P. 170,
β Dichlorpropylene. Epi-	"-----	1.21, 20°-----	125.
dichlorhydrin. "-----	"-----	1.233, 17°.5-----	Henry. Ber. 5, 965.
" "-----	"-----	1.226, 15°-----	Reboul. J. 13, 460.
" "-----	"-----	1.25, 15°-----	Hartenstein. J. P.
" "-----	"-----	1.218, 25°-----	C. (2), 7, 295.
α Trichlorpropylene-----	$C_3 H_3 Cl_3$ -----	1.387, 14°-----	Romburgh. Ber. 15,
β Trichlorpropylene-----	"-----	1.414, 20°-----	245.
Propargyl chloride-----	$C_3 H_3 Cl$ -----	1.0454, 5°-----	{ Friedel and Silva.
Crotonylene dichloride-----	$C_4 H_6 Cl_2$ -----	1.131-----	{ Quoted by Rom-
Chlorisobutylene-----	$C_4 H_7 Cl$ -----	.9785, 12°-----	burgh.
Trichlorpentane-----	$C_5 H_9 Cl_3$ -----	1.33, 13°-----	Borsche and Fittig.
Tetrachlorpentane-----	$C_5 H_8 Cl_4$ -----	2.4292-----	J. 18, 313.
Chloramylene-----	$C_5 H_9 Cl$ -----	.9992, 0°-----	Pfeffer and Fittig.
"-----	"-----	.872, 5°.1-----	J. 18, 504.
Isoprene hydrochlorate-----	"-----	.868, 16°-----	Henry. Ber. 8, 398.
Isoprene dichloride-----	$C_5 H_8 Cl_2$ -----	1.065, 16°-----	Kekulé. J. 22, 507.
Trichlorhexane-----	$C_6 H_{11} Cl_3$ -----	1.193, 21°-----	Oeconomides. Ber.
Hexachlorhexane-----	$C_6 H_8 Cl_6$ -----	1.598, 20°-----	14, 1201.
Chlorhexylene-----	$C_6 H_{11} Cl$ -----	.9636, 11°-----	Buff. J. 21, 334.
Chlordiallyl-----	$C_6 H_9 Cl$ -----	.9197, 18°.2-----	Bauer. J. 19, 531.
Chlordiamylene chloride-----	$C_{10} H_{19} Cl_3$ -----	1.1638, 0°-----	" "-----
Eikosylene chloride-----	$C_{20} H_{38} Cl_2$ -----	1.013, 24°-----	Bruylants. Ber. 8,
Isovinyl chloride-----	$(C_2 H_3 Cl)_n$ -----	1.406-----	411.
Chloronicene-----	$C_5 H_5 Cl$ -----	1.141, 10°-----	Bouchardat. J. C. S.
			38, 323.
			" "-----
			Pelouze and Ca-
			hours. J. 16, 525.
			" "-----
			Henry. C. R. 97, 260.
			Henry. J. C. S. 36, 34.
			Bauer. J. 20, 583.
			Lippmann and
			Hawliczek. Ber.
			12, 73.
			Baumänn. A. C. P.
			163, 308.
			St. Evre. J. 1, 530.

4th. Aromatic Compounds.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Monochlorbenzene	C_6H_5Cl	1.1499, 0°	From benzene. Sokoloff. J. 18, 517.
"	"	1.1347, 10°	
"	"	1.1258, 20°	
"	"	1.1188, 30°	
"	"	1.1199, 0°	From phenol. Sokoloff. J. 18, 517.
"	"	1.1085, 10°	
"	"	1.099, 20°	
"	"	1.092, 30°	
"	"	1.118	Jungfleisch. J. 19, 551.
"	"	1.77, -40°	Jungfleisch. J. 20, 36.
"	"	.980, 133°	
"	"	1.1293, 0°	Jungfleisch. J. 21, 343.
"	"	1.12855, 0°	From benzene. Adrienz. Ber. 6, 443.
"	"	1.11807, 9°.79	
"	"	1.10467, 22°.43	
"	"	1.04428, 77°.27	
"	"	1.12818, 0°	From phenol. Adrienz. Ber. 6, 443.
"	"	1.11421, 9°.79	
"	"	1.10577, 22°.43	
"	"	1.04299, 77°.27	
"	"	.9817	Schiff. G. C. I. 13, 177.
"	"	.9818	
"	"	1.1066, 20°	Brühl. Bei. 4, 780.
"	"	1.1046, 25°.2	Schall. Ber. 17, 2564.
"	"	1.0703, 52°.3	
"	"	1.106, 15°	Wallach and Heusler. A. C. P. 243, 226.
Orthodichlorbenzene	$C_6H_4Cl_2$	1.3278, 0°	Beilstein and Kurbatow. A. C. P. 176, 41.
"	"	1.3254, 0°	Friedel and Crafts. Ann. (6), 10, 416.
Metadichlorbenzene	"	1.3148	Beilstein and Kurbatow. B. S. C. 23, 179.
"	"	1.307, 0°	Beilstein and Kurbatow. J. C. S. (2), 13, 450.
Paradichlorbenzene	"	1.459, s.	Jungfleisch. J. 19, 551.
"	"	1.250, 53°	Jungfleisch. J. 20, 36.
"	"	1.123, 171°	
"	"	1.4581, 20°.5	Jungfleisch. J. 21, 347.
"	"	1.241, 63°	
"	"	1.2062, 93°	
"	"	1.1366, 166°	
"	"	1.467, 4°	Schröder. Ber. 12, 561.
"	"	1.2499, 55°.1	Schiff. A. C. P. 223, 247.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Trichlorbenzene -----	$C_6 H_3 Cl_3$ -----	1.457, 7° -----	Mitscherlich. P. A. 35, 372.
“ 1.3.4 -----	“ -----	1.575 -----	Jungfleisch. J. 19, 551.
“ “ -----	“ -----	1.457, 17°, s. } -----	Jungfleisch. J. 20, 36.
“ “ -----	“ -----	1.227, 206° } -----	
“ “ -----	“ -----	1.574, 10°, s. } -----	Jungfleisch. J. 21, 350.
“ “ -----	“ -----	1.4658, 10°, l. } -----	
“ “ -----	“ -----	1.4460, 26° } -----	
“ “ -----	“ -----	1.4111, 56° } -----	
“ “ -----	“ -----	1.2427, 196° } -----	Beilstein and Kurbatow. A. C. P. 192, 230.
“ “ -----	“ -----	1.4554, 12°, l. } -----	
Tetrachlorbenzene. 1.2.4.5	$C_6 H_2 Cl_4$ -----	1.748 -----	Jungfleisch. J. 19, 551.
“ “ -----	“ -----	1.448, 139° } -----	Jungfleisch. J. 20, 36.
“ “ -----	“ -----	1.315, 240° } -----	
“ “ -----	“ -----	1.7344, 10°, s. } -----	Jungfleisch. J. 21, 352.
“ “ -----	“ -----	1.4339, 149° } -----	
“ “ -----	“ -----	1.3958, 179° } -----	
“ “ -----	“ -----	1.3281, 230° } -----	
Pentachlorbenzene -----	$C_6 H Cl_5$ -----	1.625, 74° -----	Jungfleisch. J. 20, 36.
“ -----	“ -----	1.370, 270° } -----	
“ -----	“ -----	1.8422, 10° } -----	Jungfleisch. J. 21, 353.
“ -----	“ -----	1.8342, 16°.5 } -----	
“ -----	“ -----	1.6091, 84° } -----	
“ -----	“ -----	1.5732, 114° } -----	
“ -----	“ -----	1.3824, 261° } -----	Limpricht. J. 19, 591.
Monochlortoluene -----	$C_6 H_4. C H_3. Cl$ -----	1.080, 14° -----	
“ 1.4 -----	“ -----	1.0735, 27°.2 -----	Aronheim and Dietrich. Ber. 8, 1402.
“ “ -----	“ -----	.9351, 159°.8 -----	Schiff. G. C. I. 13, 177.
“ -----	“ -----	1.072, 24°.44 } -----	Cattaneo. Bei. 7, 584.
“ -----	“ -----	1.061, 35°.48 } -----	
“ -----	“ -----	1.049, 48°.71 } -----	
“ -----	“ -----	1.029, 67°.80 } -----	
“ -----	“ -----	1.013, 83°.86 } -----	
“ -----	“ -----	? .796, 99°.81 } -----	
“ -----	“ -----	1.0761, 19° -----	Gladstone. Bei. 9, 249.
Benzyl chloride -----	$C_6 H_5. C H_2 Cl$ -----	1.1131 -----	Cannizzaro. J. 8, 621.
“ “ -----	“ -----	1.1179 -----	
“ “ -----	“ -----	1.107, 14° -----	Limpricht. J. 19, 592.
“ “ -----	“ -----	.9452 } 175° { -----	Schiff. G. C. I. 13, 177.
“ “ -----	“ -----	.9453 } -----	
“ “ -----	“ -----	1.100, 30°.01 -----	Cattaneo. Bei. 7, 584.
“ “ -----	“ -----	1.082, 44°.37 -----	
“ “ -----	“ -----	1.066, 59° -----	
“ “ -----	“ -----	1.047, 75° -----	
“ “ -----	“ -----	1.016, 100°.08 -----	Gladstone. Bei. 9, 249.
“ “ -----	“ -----	1.099, 7° -----	
“ “ -----	“ -----	.9453, 178° -----	Schiff. G. C. I. 13, 177.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Dichlortoluene. 1.2.4 ----	$C_6H_3. CH_3. Cl_2$ ----	1.24597, 20° --	L e l l m a n n a n d Klotz. A. C. P. 231, 308.
“ 1.2.5 ----	“ ----	1.2535, 20° ----	“ “
“ 1.3.4 ----	“ ----	1.2518, 16° } ----	Aronheim and Die- trich. Ber. 8, 1403.
“ “ ----	“ ----	1.2596, 18°.4 } ----	
“ “ ----	“ ----	1.2512, 20° ----	L e l l m a n n a n d Klotz. A. C. P. 231, 308.
“ B. 202°--	“ ----	1.256, 13° ----	Beilstein. J. 13, 412.
“ B. 207°--	“ ----	1.2557, 14° ----	Limpricht. J. 19, 593.
Benzylidene dichloride----	$C_6H_5. CHCl_2$ ----	1.245, 16° ----	Cahours. J. 1, 711.
“ “ ----	“ ----	1.295, 16° ----	Hübner and Bente. Ber. 6, 804.
“ “ ----	“ ----	1.2699, 0° ----	} Schiff. Ber. 19, 563.
“ “ ----	“ ----	1.2122, 56°.8--	
“ “ ----	“ ----	1.1877, 79°.2--	
“ “ ----	“ ----	1.1257, 135°.5--	
“ “ ----	“ ----	1.0407, 203°.5--	
Trichlortoluene ----	$C_6H_2. CH_3. Cl_3$ ----	1.413, 9° ----	Henry. J. 22, 508.
“ ----	“ ----	1.4093, 19°.5--	Aronheim and Die- trich. Ber. 8, 1405.
Dichlorbenzyl chloride----	$C_6H_3Cl_2. CH_2Cl$ ----	1.44, 0° ----	Naquet. J. 15, 419.
Benzyl trichloride----	$C_6H_5. CCl_3$ ----	1.61, 13° ----	Limpricht. J. 18, 538.
“ “ ----	“ ----	1.380, 14° ----	Limpricht. J. 19, 594.
Tetrachlortoluene ----	$C_6HCl_4. CH_3$ ----	1.495, 14° ----	Limpricht. J. 19, 595.
Trichlorbenzyl chloride--	$C_6H_2Cl_3. CH_2Cl$ --	1.547, 23° ----	Beilstein and Kuhl- berg. J. 21, 361.
Orthodichlorbenzylene di- chloride.	$C_6H_3Cl_2. CHCl_2$ --	1.518, 22° ----	“ “
Chlorbenzo-trichloride.1.3	$C_6H_4Cl. CCl_3$ ----	1.74 } 13°-- {	Limpricht. A. C. P. 134, 58.
“ “ ----	“ ----	1.76 } ----	
“ “ 1.2	“ ----	1.51 ----	Kolbe and Laute- mann. A. C. P. 115, 196.
Dichlorbenzo-trichloride -	$C_6H_3Cl_2. CCl_3$ ----	1.587, 21° ----	Beilstein and Kuhl- berg. Z. C. 21, 363.
“ “ --	“ ----	1.5829, 16° --	Aronheim and Die- trich. Ber. 8, 1403.
Trichlorbenzylene dichlo- ride.	$C_6H_2Cl_3. CHCl_2$ --	1.607, 22° ----	Beilstein and Kuhl- berg. Z. C. 21, 362.
Tetrachlorbenzyl chloride	$C_6HCl_4. CH_2Cl$ ----	1.634, 25° ----	“ “
Tetrachlorbenzylene di- chloride.	$C_6HCl_4. CHCl_2$ ----	1.704, 25° ----	Beilstein and Kuhl- berg. Z. C. 21, 364.
Chlororthoxylylene-----	$C_6H_3. CH_3. CH_3. Cl$	1.0863, 19° --	Claus and Kautz. Ber. 18, 1367.
“ 1.2.4 ----	“ --	1.0692, 15° --	Krüger. Ber. 18, 1757.
Chlormetaxylylene. 1.3.4 --	“ --	1.0598, 20° --	Jacobsen. Ber. 18, 1761.
Isotolyl chloride -----	$C_6H_4. CH_3. CH_2Cl$ ----	1.079, 0° ----	} Gundelach. B. S. C. 25, 385.
“ “ -----	“ ----	1.064, 20° --	
Chlorethylbenzene-----	$C_6H_4. C_2H_5. Cl$ ----	1.075, 0° ----	Istrati. B. S. C. 42, 115.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Chlorethylbenzene-----	$C_6H_4.C_2H_5.Cl$ ----	1.068-----	Istrati. Ber. 18, ref. 704.
Dichlororthoxylyene-----	$C_6H_2.CH_3.CH_3.Cl_2$ ----	1.333, s.-----	Colson. Ann. (6), 6, 86. Kautz. Freiburg In. Diss. 1885.
“-----	“-----	1.150, 70°, l.-----	
“-----	“-----	1.250, 20°, l.-----	
“-----	“-----	1.0980-----	
Dichlormetaxylyene-----	“-----	1.302, 20°, s.-----	Colson. Ann. (6), 6, 86.
“-----	“-----	1.202, 40°, l.-----	
Dichlorparaxylyene-----	“-----	1.343, s.-----	“-----
Orthoxylyene dichloride----	$C_6H_4(C_2H_2Cl)_2$ ----	1.393-----	Colson. C. R. 104, 429.
Metaxylyene dichloride----	“-----	1.370-----	“-----
Paraxylyene dichloride----	“-----	1.417-----	“-----
Orthoxylyene tetrachloride----	$C_6H_4(C_2HCl_2)_2$ ----	1.601-----	“-----
Metaxylyene tetrachloride----	“-----	1.536-----	Colson and Gautier. C. R. 102, 689.
Paraxylyene tetrachloride----	“-----	1.606-----	“-----
Chlorcymene. 1.4.6-----	$C_6H_3.CH_3.C_3H_7.Cl$ ----	1.014, 14°-----	Gerichten. Ber. 10, 1249.
Diethylmonochlorbenzene----	$C_6H_3.Cl.(C_2H_5)_2$ ----	1.036-----	Istrati. Ber. 18, ref. 704.
Triethylmonochlorbenzene.	$C_6H_2.Cl.(C_2H_5)_3$ ----	1.028-----	“-----
Tetrethylmonochlorbenzene.	$C_6H.Cl.(C_2H_5)_4$ ----	1.022-----	“-----
Pentethylmonochlorbenzene.	$C_6Cl.(C_2H_5)_5$ -----	1.065-----	“-----
β Chlorstyrolene-----	C_8H_7Cl -----	2.112, 22°.3-----	Glaser. A. C. P. 154, 166.
β Benzene hexchloride----	$C_6H_6Cl_6$ -----	1.89, 19°-----	Meunier. Ann. (6), 10, 223.
By action of ethylene on monochlorbenzene.	C_9H_9Cl -----	1.179-----	Istrati. Ber. 18, ref. 704.
α Chlornaphthalene-----	$C_{10}H_7Cl$ -----	1.2052, 6°.2-----	Laurent. Quoted by Carius.
“-----	“-----	1.2028, 6°.4-----	Carius. A. C. P. 114, 146.
“-----	“-----	1.2025, 15°-----	Koninck and Marquart. C. N. 25, 57.
β Chlornaphthalene-----	“-----	1.2656, 16°-----	Rimarenko. Ber. 9, 664.
Naphthalene dichloride----	$C_{10}H_8Cl_2$ -----	1.287, 12°.5-----	Gladstone. Bei. 9, 249.
“-----	“-----	1.2648, 18°-----	
Trichloracenaphtene-----	$C_{12}H_7Cl_3$ -----	1.43, 17°-----	Kebler and Norton. A. C. J. 10, 218.
Camphryl chloride-----	$C_9H_{13}Cl$ -----	1.038, 14°-----	Schwanert. J. 15, 465.
Geraniol hydrochlorate----	$C_{10}H_{17}Cl$ -----	1.020, 20°-----	Jacobsen. A. C. P. 157, 236.
Caoutchin hydrochlorate----	“-----	1.433-----	Watts' Dictionary.
From terpene of Pinus pumilio.	“-----	.982, 17°-----	Buchner. J. 13, 479.
Terebenthene hydrochlorate. “-----	“-----	1.016-----	Two isomers. Barbier. C. R. 96, 1066.
“-----	“-----	1.017-----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Isoterebenthene hydrochlorate.	$C_{10}H_{17}Cl$ -----	.9927, 0° -----	Riban. C. R. 79, 225.
From terpene of Muscat nut oil.	" -----	.9827, 15° -----	Cloëz. J. 17, 536.

LII. COMPOUNDS CONTAINING C, H, O, AND CL.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Dichlorethyl alcohol -----	$C_2H_4Cl_2O$ -----	1.145, 15° -----	Delacre. Bull. Acad. Belg. (3), 13, 248.
Trichlorethyl alcohol -----	$C_2H_3Cl_3O$ -----	1.55, 23°.3 -----	Garzarolli-Thurnlackh. Ber. 14, 2826.
Dichlorhexyl alcohol -----	$C_6H_{12}Cl_2O$ -----	1.4, 12° -----	Destrem. Ann. (5), 27, 50.
Dichlormethyl oxide -----	$C_2H_4Cl_2O$ -----	1.315, 20° -----	Regnault. Ann. (2), 71, 398.
Tetrachlormethyl oxide --	$C_2H_2Cl_4O$ -----	1.606, 20° -----	Regnault. Ann. (2), 71, 401.
Tetrachlormethylethyl oxide.	$C_3H_4Cl_4O$ -----	1.84, 0° -----	Magnanini. G. C. I. 16, 330.
Chlorethyl oxide -----	C_4H_9ClO -----	1.0572, 0° -----	Henry. C. R. 100, 1007.
Dichlorethyl oxide -----	$C_4H_8Cl_2O$ -----	1.174, 23° -----	Lieben. J. 12, 446.
Tetrachlorethyl oxide -----	$C_4H_6Cl_4O$ -----	1.5008 -----	Malaguti. Ann. (2), 70, 341.
" " -----	" -----	1.4379, 0° --	Paterno and Pisati. Ber. 5, 1054.
" " -----	" -----	1.4182, 15°.2	
" " -----	" -----	1.3055, 99°.9	
" " -----	" -----	1.4211, 15° -----	
Pentachlorethyl oxide -----	$C_4H_5Cl_5O$ -----	1.645 -----	Roscoe and Schorlemmer's Treatise. Jacobsen. Z. C. 14, 444.
" " -----	" -----	1.577, 8° -----	Henry. Ber. 7, 763.
Chloracetic acid -----	$C_2H_3ClO_2$ -----	1.366, 73° -----	R. Hofmann. J. 10, 348.
Dichloracetic acid -----	$C_2H_2Cl_2O_2$ -----	1.5216, 15° -----	Maumené. J. 17, 315.
Trichloracetic acid -----	$C_2HCl_3O_2$ -----	1.617, 46° -----	Dumas. A. C. P. 32, 109.
Chlorpropionic acid -----	$C_3H_5ClO_2$ -----	1.28, 0° -----	Clermont. Z. C. 14, 349.
Chlorbutyric acid -----	$C_4H_7ClO_2$ -----	1.072, 0° -----	Balbiano. Ber. 10, 1749.
" " γ -----	" -----	1.2498, 10° -----	Henry. C. R. 101, 1158.
" " ? -----	" -----	1.065, 15° -----	Haubst. J. C. S. (2), 1, 693.
Chlorisobutyric acid -----	" -----	1.062, 0° -----	Balbiano. Ber. 11, 1693.
Methyl chlorocarbonate --	$C_2H_3ClO_2$ -----	1.236, 15° -----	Röse. Ber. 13, 2417.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethyl chlorocarbonate ---	$C_3 H_5 Cl O_2$ -----	1.133, 15° ----	Dumas. Ann. (2), 54, 230.
Propyl chlorocarbonate --	$C_4 H_7 Cl O_2$ -----	1.094, 15° ----	Röse. Ber. 13, 2417.
Isopropyl chlorocarbonate	" -----	1.144, 4° ----	Spica. J. C. S. 52, 1028.
Isobutyl chlorocarbonate--	$C_5 H_9 Cl O_2$ -----	1.053, 15° ----	Röse. Ber. 13, 2417.
Isoamyl chlorocarbonate--	$C_6 H_{11} Cl O_2$ -----	1.032, 15° ----	" "
Dichlorethyl formate-----	$C_3 H_4 Cl_2 O_2$ -----	1.261, 16° ----	Malaguti. Ann. (2), 70, 370.
Pentachloramyl formate--	$C_6 H_7 Cl_5 O_2$ -----	1.52 -----	Springer. A. C. J. 3, 293.
Methyl monochloracetate--	$C_3 H_5 Cl O_2$ -----	1.22, 15° ----	Henry. B. S. C. 20, 448.
" " --	" -----	1.2352, 19°.2--	Henry. C. R. 101, 250.
Methyl dichloracetate----	$C_3 H_4 Cl_2 O_2$ -----	1.3808, 19°.2--	" "
Dichlormethyl acetate ---	" -----	1.25 -----	Malaguti. Ann. (2), 70, 381.
Methyl trichloracetate ---	$C_3 H_3 Cl_3 O_2$ -----	1.4969, 14° } -----	Bauer. A. C. P. 229, 163.
" " -----	" -----	1.4902, 20°.2 } -----	
" " -----	" -----	1.4892, 19°.2--	Henry. C. R. 101, 250.
Ethyl monochloracetate--	$C_4 H_7 Cl O_2$ -----	1.1585, 20° ---	Brühl. A. C. P. 203, 1.
" " --	" -----	.9925, 144°.5--	Schiff. G. C. I. 13, 177.
" " --	" -----	1.1722, 8° ----	Henry. C. R. 104, 1280.
Ethyl dichloracetate -----	$C_4 H_6 Cl_2 O_2$ -----	1.301, 12° ----	Malaguti. Ann. (2), 70, 368.
" " -----	" -----	1.29 -----	Forscher and Geuthner. J. 17, 316.
" " -----	" -----	1.2821, 20° ---	Brühl. A. C. P. 203, 1.
" " -----	" -----	1.0913 } -----	{ Schiff. G. C. I. 13, 177.
" " -----	" -----	1.0915 } -----	
Dichlorethyl acetate -----	" -----	1.3217, 10°.6--	Henry. C. R. 97, 1308.
" " -----	" -----	1.104, 15° ----	Delacre. Bull. Acad. Belg. (3), 13, 255.
Ethyl trichloracetate-----	$C_4 H_5 Cl_3 O_2$ -----	1.3826, 20° ---	Brühl. A. C. P. 203, 1.
" " -----	" -----	1.1650 } -----	{ Schiff. G. C. I. 13, 177.
" " -----	" -----	1.1651 } -----	
Monochlorethyl dichloracetate.	" -----	1.200, 15° ----	Delacre. Ber. 21, ref. 183.
Dichlorethyl monochloracetate.	" -----	1.216, 15° ----	" "
Trichlorethyl acetate ---	" -----	1.367 -----	Léblanc. Ann. (3), 10, 207.
" " -----	" -----	1.35, 20° ----	Malaguti. Ann. (3), 16, 62.
" " -----	" -----	1.3907, 23°.3--	Garzarolli-Thurnlackh. Ber. 14, 2826.
" " -----	" -----	1.187, 15° ----	Delacre. Ber. 21, ref. 183.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Tetrachlorethyl acetate----	$C_4 H_4 Cl_4 O_2$ -----	1.485, 25° ----	Léblanc. Ann. (3). 10, 212.
Monochlorethyl trichloracetate.	"-----	1.251, 15° ----	Delacre. Ber. 21, ref. 183.
Dichlorethyl dichloracetate.	"-----	1.25, 15° ----	" "
Trichlorethyl monochloracetate.	"-----	1.25 -----	" "
Trichlorethyl dichloracetate.	$C_4 H_3 Cl_5 O_2$ -----	1.267 -----	" "
Hexchlorethyl acetate----	$C_4 H_2 Cl_6 O_2$ -----	1.698, 23°.5----	Léblanc. Ann. (3), 10, 215.
Heptachlorethyl acetate--	$C_4 H Cl_7 O_2$ -----	1.692, 24°.5----	Léblanc. Ann. (3), 10, 208.
Propyl monochloracetate--	$C_5 H_9 Cl O_2$ -----	1.1096, 8° ----	Henry. C. R. 100, 114.
Butyl monochloracetate--	$C_6 H_{11} Cl O_2$ -----	1.013, 0° ----	Gehring. C. R. 102, 1400.
" "-----	"-----	1.081, 15° ----	
Trichlorbutyl acetate ----	$C_6 H_9 Cl_3 O_2$ -----	1.3440, 8°.5----	Garzarolli-Thurn- lackh. Ber. 15, 2619.
Amyl monochloracetate--	$C_7 H_{13} Cl O_2$ -----	1.063, 0° ----	Hougounenq. B. S. C. 45, 328.
Methyl α chlorpropionate	$C_4 H_7 Cl O_2$ -----	1.075, 4° ----	Kahlbaum. Ber. 12, 344.
Ethyl α chlorpropionate--	$C_5 H_9 Cl O_2$ -----	1.0869, 20° ----	Brühl. A. C. P. 203, 1.
Ethyl β chlorpropionate--	"-----	1.1160, 8° ----	Henry. C. R. 100, 114.
Ethyl dichlorpropionate--	$C_5 H_8 Cl_2 O_2$ -----	1.2461, 20° ----	Brühl. A. C. P. 203, 1.
" "-----	"-----	1.2493, 0° ----	Klimenko. Z. C. 13, 654.
Dichlorethyl propionate--	"-----	1.282, 8° ----	Henry. C. R. 100, 114.
Methyl chlorbutyrate ----	$C_5 H_9 Cl O_2$ -----	1.1894, 10° ----	Henry. C. R. 101, 1158.
Methyl $\alpha \beta$ dichlorbutyrate.	$C_5 H_8 Cl_2 O_2$ -----	1.2809, 0° ----	Zeisel. Ber. 19, ref. 749.
" "-----	"-----	1.2614, 18°.3	
" "-----	"-----	1.2355, 41°.1	
Ethyl chlorbutyrate ----	$C_6 H_{11} Cl O_2$ -----	1.0517, 20° ----	Brühl. A. C. P. 203, 1.
" "-----	"-----	1.1221, 10° ----	Henry. C. R. 101, 1158.
" "-----	"-----	1.063, 17°.5----	Markownikoff. A. C. P. 153, 243.
Methyl trichlorpropylcarb- ylacetate.	$C_7 H_{11} Cl_3 O_2$ -----	1.3048, 11°.5----	Garzarolli-Thurn- lackh. A. C. P. 223, 149.
Chloroanthic ether ----	$C_9 H_{17} Cl O_2$?-----	1.2912, 16°.5----	Malaguti. Ann. (2), 70, 363.
Derivative of chlorinated methyl formate.	$C_4 H_5 Cl_3 O_4$ -----	1.4786, 14° ----	Guthzeit. Quoted by Hentschel.
" "-----	"-----	1.4741, 27° ----	Hentschel. J. P. C. (2), 36, 99.
" "-----	$C_8 H_9 Cl_7 O_8$ -----	1.5191 -----	" "
Derivative of chlorinated ether.	$C_5 H_{11} Cl O$ -----	.9482, 0° ----	Lieben and Bauer. J. 15, 494.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Derivative of chlorinated ether.	$C_6 H_{13} Cl O$ -----	.9735, 0° -----	Lieben and Bauer. J. 15, 393.
Chloracetic anhydride-----	$C_4 H_5 Cl O_3$ -----	1.201, 21° -----	Anthoine. J. Ph. Ch. (5), 8, 417.
Trichloracetic anhydride -	$C_4 H_3 Cl_3 O_3$ -----	1.530, 20° -----	" "
Tetrachloracetic anhy- dride.	$C_4 H_2 Cl_4 O_3$ -----	1.574, 24° -----	" "
Acetyl chloride-----	$C_2 H_3 O. Cl$ -----	1.125, 11° -----	Gerhardt. J. 5, 444.
" " -----	" -----	1.1305, 0° -- }	Kopp. A. C. P. 95, 307.
" " -----	" -----	1.1072, 16° }	
" " -----	" -----	1.13773, 0° -----	} Thorpe. J. C. S. 37, 371.
" " -----	" -----	1.05698, 50°.73 }	
" " -----	" -----	1.1051, 20° -----	Brühl. A. C. P. 203, 1.
Chloracetyl chloride -----	$C_2 H_2 Cl O. Cl$ -----	1.495, 0° -----	Wurtz. J. 10, 346.
Propionyl chloride -----	$C_3 H_5 O. Cl$ -----	1.0646, 20° -----	Brühl. A. C. P. 203, 1.
α Chloropropionyl chloride	$C_3 H_4 Cl O. Cl$ -----	1.2394, 7°.5----	Henry. C. R. 100, 114.
β Chloropropionyl chloride	" -----	1.3307, 13° -----	" "
Butyryl chloride -----	$C_4 H_7 O. Cl$ -----	1.0277, 20° -----	Brühl. A. C. P. 203, 1.
Isobutyryl chloride-----	" -----	1.0174, 20° -----	" "
Chlorobutyryl chloride----	$C_4 H_6 Cl O. Cl$ -----	1.257, 17° -----	Markownikoff. A. C. P. 153, 241.
" " -----	" -----	1.2679, 10° -----	Henry. C. R. 101, 1158.
Valeryl chloride-----	$C_5 H_9 O. Cl$ -----	1.005, 6° -----	Béchamp. J. 9, 429.
" " -----	" -----	.9887, 20° -----	Brühl. A. C. P. 203, 1.
Chloracetone -----	$C_3 H_5 Cl O$ -----	1.19 -----	Linnemann.
" -----	" -----	1.14, 14° -----	Riche. J. 12, 339.
" -----	" -----	1.162, 16° -----	Linnemann. J. 18, 312.
" -----	" -----	1.18, 16° -----	Linnemann. J. 19, 308.
" -----	" -----	1.17 -----	Henry. B. S. C. 19, 219.
" -----	" -----	1.158, 13° -----	Cloëz. Ann. (6), 9, 145.
Dichloracetone -----	$C_3 H_4 Cl_2 O$ -----	1.331 -----	Kane.
" -----	" -----	1.236, 21° -----	Fittig. J. 12, 345.
" -----	" -----	1.326, 0° -----	Theegarten. C. C. 4, 580.
" -----	" -----	1.234, 15° -----	Cloëz. Ann. (6), 9, 145.
Tetrachloracetone -----	$C_3 H_2 Cl_4 O$ -----	1.482, 17° -----	" "
Pentachloracetone-----	$C_3 H Cl_5 O$ -----	1.6 } -----	Städeler. J. 6, 398.
" -----	" -----	1.7 }	
" -----	" -----	1.617, 8° -----	{ Two isomers. Cloëz. B. S. C. 39, 638 and 640.
" -----	" -----	1.576, 14° -----	
Chloraldehyde -----	$C_2 H_3 Cl O$ -----	1.23 -----	Riche. J. 12, 435.
Paradichloraldehyde-----	$(C_2 H_2 Cl_2 O)_n$ -----	1.69, s.-----	Jacobsen. Ber. 8, 88.
Chloral -----	$C_2 H Cl_3 O$ -----	1.502, 18° -----	Liebig. A. C. P. 1, 195.
" -----	" -----	1.5183, 0° -- }	Kopp. A. C. P. 95, 307.
" -----	" -----	1.4903, 22°.2 }	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Chloral	$C_2 H Cl_3 O$	1.5448, 0°	Thorpe. J. C. S. 37, 371.
"	"	1.3821, 97°.2	
"	"	1.5121, 20°	
"	"	1.54179	Brühl. A. C. P. 203, 1.
"	"	1.54170	
"	"	1.3692, 97°.73	
"	"	1.5292, 9°	} Passavant. C. N. 42, 288.
"	"	1.5197, 15°	
"	"	1.5060, 25°	
Parachloralide	$(C_2 H Cl_3 O)_n$	1.5765, 14°	Perkin. J. C. S. 51, 808.
Chloral hydrate	$C_2 H_3 Cl_3 O_2$	1.901	Clöez. J. 12, 434.
"	"	1.818, 4°, pulv.	Rüdorff. Ber. 12, 252.
"	"	1.848, 4°, cryst.	} Schröder. Ber. 12, 561.
"	"	1.6415, 49°.9	
"	"	1.6274, 58°.4	
"	"	1.6136, 66°.9	Perkin. J. C. S. 51, 808.
"	"	1.5704	} Jungfleisch, Le- baigne, and Rou- cher. J. Ph. C. (4), 11, 208.
"	"	1.5719	
"	"	1.5771	
Chloral ethylate	$C_4 H_7 Cl_3 O_2$	1.143, 40°, 1.	Martins and Men- delsohn-Bar- tholdy. Z. C. 13, 650.
"	"	1.3286	} Jungfleisch, Le- baigne, and Rou- cher. J. Ph. C. (4), 11, 208.
"	"	1.3439	
"	"	66°, 1.	
Chloral amylate	$C_7 H_{11} Cl_3 O_2$	1.234, 25°	Martins and Men- delsohn-Bar- tholdy. Z. C. 13, 650.
Chloracetyl chloral	$C_4 H_4 Cl_4 O_2$	1.4761, 17°	Meyer and Dulk. A. C. P. 171, 65.
Diacetylchloral hydrate	$C_6 H_7 Cl_3 O_4$	1.422, 11°	" "
Acetylchloral ethylate	$C_6 H_9 Cl_3 O_3$	1.327, 11°	" "
Derivative of chloral	$C_6 H_6 Cl_8 O_2$	1.73, 17°	Henry. Ber. 7, 764.
"	$C_7 H_{10} Cl_4 O_3$	1.42, 11°	" "
Butyl chloral	$C_4 H_5 Cl_3 O$	1.3956, 20°	Brühl. A. C. P. 203, 1.
"	"	1.4111, 7°	Gladstone. Bei. 9, 249.
Butyl chloral hydrate	$C_4 H_7 Cl_3 O_2$	1.693	} 4° { Schröder. Ber. 12, 561.
"	"	1.695	
Derivative of chloralide	$C_5 H Cl_7 O_3$	1.7426, 20°	Anschutz and Has- lam. A. C. P. 239, 300.
Chlorovaleral	$C_5 H_9 Cl O$	1.108, 14°	A. Schröder. Z. C. 14, 510.
Derivative of valeral	$C_{10} H_{10} Cl_4 O$	1.272, 14°	" "
"	$C_{10} H_{12} Cl_6 O$	1.397, 14°	" "
Dichlorvinylmethyloxyde	$C_3 H_4 Cl_2 O$	1.2934, 0°	} Denaro. G. C. I. 14, 117.
"	"	1.1574, 100°	
Monochlorvinyl ethyl oxide.	$C_4 H_7 Cl O$	1.0361, 19°	Godefroy. C. R. 102, 869.
Trichlorvinyl ethyl oxide	$C_4 H_5 Cl_3 O$	1.3725, 0°	} Paterno and Pisati. J. C. S. (2), 11, 158.
"	"	1.2354, 99°.9	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Trichlorvinyl ethyl oxide	$C_4 H_5 Cl_3 O$ -----	1.3322, 19° ----	Godefroy. C. R. 102, 869.
Methylene aceto-chloride	$C_3 H_5 Cl O_2$ -----	1.1953, 14°.2--	Henry. B. S. C. 20, 448.
Ethylene aceto-chloride	$C_4 H_7 Cl O_2$ -----	1.1783, 0° ----	Simpson. J. 12, 487.
" " "	" " "-----	1.114, 15° ----	Franchimont. J. C. S. 44, 452.
Ethylene butyro-chloride	$C_6 H_{11} Cl O_2$ -----	1.0854, 0° ----	Simpson. J. 12, 489.
Ethylidene oxychloride	$C_4 H_8 Cl_2 O$ -----	1.1376, 12° ----	Lieben. J. 11, 291.
" " "	" " "-----	1.136, 14°.5--	Laatsch. A. C. P. 218, 13.
Ethylidene aceto-chloride	$C_4 H_7 Cl O_2$ -----	1.114, 15° ----	Rübencamp. A. C. P. 225, 267.
Ethylidene propio-chloride.	$C_5 H_9 Cl O_2$ -----	1.071, 15° ----	" "
Ethylidene butyro-chloride.	$C_6 H_{11} Cl O_2$ -----	1.038, 15° ----	" "
Ethylidene valero-chloride	$C_7 H_{13} Cl O_2$ -----	.997, 15° ----	" "
Aldehydemethyl chloride	$C_3 H_7 Cl O$ -----	.996, 17° ----	" "
Trichlordimethyl acetal	$C_4 H_7 Cl_3 O_2$ -----	1.28 -----	Magnanini. G. C. I. 16, 330.
Trichlormethylethyl acetal.	$C_5 H_9 Cl_3 O_2$ -----	1.32 -----	" "
Chloracetal	$C_6 H_{13} Cl O_2$ -----	1.0195 -----	Lieben. J. 10, 437.
"	"-----	1.0418, 0° --	Paterno and Mazzara. J. C. S. (2), 11, 1217.
"	"-----	1.0416, 26°.3 }	
"	"-----	.9315, 99°.9 }	
"	"-----	1.026, 15° ----	Klien. J. C. S. 31, 291.
Dichloracetal	$C_6 H_{12} Cl_2 O_2$ -----	1.1383, 14° ----	Lieben. J. 10, 436.
Trichloracetal	$C_6 H_{11} Cl_3 O_2$ -----	1.2813, 0° ----	{ Paterno and Pisati. J. C. S. (2), 11, 258.
"	"-----	1.2655, 22°.2--	
"	"-----	1.1617, 99°.96--	
"	"-----	1.288 -----	Byasson. C. N. 38, 46.
Trimethylene chlorhydrin	$C_3 H_7 Cl O$ -----	1.132, 17° ----	Reboul. C. R. 79, 169.
Propylene chlorhydrin	"-----	1.1302, 0° ----	Oeser. J. 13, 448.
" " "	"-----	1.247 -----	Oppenheim. J. 21, 340.
Chlorbutylene chlorhydrin	$C_4 H_8 Cl_2 O$ -----	1.0335, 0° ----	Oeconomides. Ber. 14, 1568.
Hexylene chlorhydrin	$C_6 H_{13} Cl O$ -----	1.0143 }	11°-- Henry. C. R. 97, 260.
" " "	"-----	1.018 }	
Hexylene aceto-chloride	$C_8 H_{15} Cl O_2$ -----	1.04, 6° -----	" "
Heptylene chlorhydrin	$C_7 H_{15} Cl O$ -----	1.014, 0° ----	Clermont. Z. C. 13, 411.
" " "	"-----	1.001, 14° ----	
Octylene chlorhydrin	$C_8 H_{17} Cl O$ -----	1.003, 0° }	" "
" " "	"-----	.987, 31° }----	
Octylene aceto-chloride	$C_{10} H_{19} Cl O_2$ -----	1.026, 0° }	" "
" " "	"-----	1.011, 18° }----	
Dichlorethoxyethylene	$C_4 H_6 Cl_2 O$ -----	1.08, 10° -----	Geuther and Brockhoff. J. P. C. (2), 7, 114.
Pentachlorpropylene oxide.	$C_3 H Cl_5 O$ -----	a1.5 -----	Cloëz. Ann. (6), 9, 145.
Ethyl-glycollic chloride	$C_4 H_7 Cl O_2$ -----	1.145, 1° -----	Henry. J. 22, 531.
Chlorolactic ether	$C_5 H_9 Cl O_3$ -----	1.097, 0° -----	Wurtz. J. 11, 254.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethyl chloromalonate----	$C_7 H_{11} Cl O_4$ -----	1.185, 20° ----	Conrad and Bisch-off. A. C. P. 209, 221.
Ethyl ethylchloromalo- nate.	$C_9 H_{15} Cl O_4$ -----	1.110, 17° ----	Guthzeit. A. C. P. 209, 233.
Ethyl chlorisobutylmalo- nate.	$C_{11} H_{19} Cl O_4$ -----	1.094, 15° ----	Conrad and Bisch-off. Ber 13, 600.
“ “ ----	“ -----	1.091, 15° ----	Guthzeit. A. C. P. 209, 237.
Succinyl chloride-----	$C_4 H_4 Cl_2 O_2$ -----	1.39 -----	Gerhardt and Chiozza. C. R. 36, 1052.
Chloromaleic ether -----	$C_8 H_{11} Cl O_4$ -----	1.15, 11° ----	Henry. A. C. P. 156, 179.
“ “ -----	“ -----	1.178, 20° ----	Frank. Ber. 10, 928.
Ethyl chloracetacetate ----	$C_6 H_9 Cl O_3$ -----	1.19, 14° ----	Allihn. Ber. 11, 569.
Ethyl dichloracetacetate--	$C_6 H_8 Cl_2 O_3$ -----	1.293, 16° ----	Conrad. A. C. P. 186, 234.
Ethyl chloracetopropio- nate.	$C_7 H_{11} Cl O_3$ -----	1.196, 21° ----	Conrad and Guthzeit. Ber. 17, 2287.
Ethyl monochlormethyl- acetacetate.	$C_7 H_{11} Cl O_3$ -----	1.093, 15° ----	Isbert. A. C. P. 234, 160.
Ethyl dichlormethylacet- acetate.	$C_7 H_{10} Cl_2 O_3$ -----	1.2250, 17° ----	Isbert. Jena Inaug. Diss. 1866.
Ethyl monochlorethyl- acetacetate.	$C_8 H_{13} Cl O_3$ -----	1.0523, 15° ----	Isbert. A. C. P. 234, 160.
Ethyl dichlorethylacetace- tate.	$C_8 H_{12} Cl_2 O_3$ -----	1.183, 15° ----	“ “
Ethyl diethylchloracetace- tate.	$C_{10} H_{17} Cl O_3$ -----	1.063, 15° ----	James. J. C. S. 49, 50.
Ethyl diethyldichloracet- acetate.	$C_{10} H_{16} Cl_2 O_3$ -----	1.155, 15° ----	“ “
Acetotrithlorethylidene acetic ether.	$C_8 H_9 Cl_3 O_3$ -----	1.342, 15° ----	Matthews. J. C. S. 43, 203.
Monochlorhydrin-----	$C_3 H_7 Cl O_2$ -----	1.31 -----	Berthelot. J. 6, 456.
“ -----	“ -----	1.4, 13° -----	Henry. J. C. S. (2), 13, 346.
“ β-----	“ -----	1.328, 0° -----	Hanriot. Ber. 10, 727.
Dichlorhydrin-----	$C_3 H_6 Cl_2 O$ -----	1.37 -----	Berthelot. J. 7, 449.
“ -----	“ -----	1.3699, 9° ----	Henry. A. C. P. 155, 324.
“ -----	“ -----	1.355, 17°.5----	Gegerfeldt. Z. C. 13, 672.
“ -----	“ -----	1.383, 0° ----	Markownikoff. J. C. S. (2), 12, 241.
“ -----	“ -----	1.367, 19° --	
“ -----	“ -----	1.3799, 0° --	Tollens. A. C. P. 156, 164.
“ -----	“ -----	1.3681, 11°.5 }	
Epichlorhydrin -----	$C_3 H_5 Cl O$ -----	1.204, 0° ----	Darmstaedter. J. 21, 454.
“ -----	“ -----	1.194, 11° ----	Reboul. J. 13, 456.
“ -----	“ -----	1.20313, 0° ----	} Thorpe. J. C. S. 37, 371.
“ -----	“ -----	1.05667, 116°.55 }	
“ -----	“ -----	1.0588 } 115°.8	{ Schiff. Ber. 14, 2768.
“ -----	“ -----	1.0598 }	
“ -----	“ -----	1.194, 11° ----	Clöez. Ann. (6), 9, 145.
Ethyl monochlorhydrin--	$C_5 H_{11} Cl O_2$ -----	1.117, 11° ----	Henry. J. C. S. (2), 13, 346.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Diethyl monochlorhydrin	$C_7 H_{15} Cl O_2$	1.03, 10°.5	Alsberg. J. 17, 496.
“ “	“	1.005, 17°	Reboul and Lourenço. J. 14, 674.
Amyl monochlorhydrin	$C_8 H_{17} Cl O_2$	1.00, 20°	Reboul. J. 13, 464.
Aceto-chlorhydrin	$C_5 H_9 Cl O_3$	1.27, 9°	Henry. J. C. S. (2), 13, 346.
Aceto-dichlorhydrin	$C_5 H_8 Cl_2 O_2$	1.283, 11°	Truchot. J. 18, 503.
“ “	“	1.274, 8°	Henry. Ber. 4, 701.
Diaceto-chlorhydrin	$C_7 H_{11} Cl O_4$	1.243, 4°	Truchot. J. 18, 503.
Butyro-dichlorhydrin	$C_7 H_{12} Cl_2 O_2$	1.194, 11°	“ “
Valero-dichlorhydrin	$C_8 H_{14} Cl_2 O_2$	1.149, 11°	“ “
Butenyl monochlorhydrin	$C_4 H_9 Cl O_2$	1.2324, 17°	Zikes. Ber. 18, ref. 433.
Butenyl dichlorhydrin	$C_4 H_8 Cl_2 O$	1.274, 16°	“ “
Butenyl epichlorhydrin	$C_4 H_7 Cl O$	1.098, 15°	“ “
Diallyl dichlorhydrin	$C_6 H_{12} Cl_2 O_2$	1.4, 7°	Henry. Ber. 7, 416.
α Chlorallyl alcohol	$C_3 H_5 Cl O$	1.164, 19°	Henry. Ber. 15, 3085.
β Chlorallyl alcohol	“	1.162, 15°	Romburgh. Ber. 15, 245.
Methylchlorallylcarbinol	$C_5 H_9 Cl O$	1.08821, 14°.1	Garzarolli-Thurnlackh. A.C.P. 223, 149.
Chlorerotyl alcohol	$C_4 H_7 Cl O$	1.1312, 15°	Garzarolli-Thurnlackh. Ber. 15, 2619.
Methyl chlorerotate	$C_5 H_7 Cl O_2$	1.143, 15°	Fröhlich. J. 22, 547.
“ “	“	1.0933, 4°	Kahlbaum. Ber. 12, 344.
Ethyl chlorerotate	$C_6 H_9 Cl O_2$	1.113, 15°	Fröhlich. J. 22, 547.
“ “	“	1.129, 15°	Claus. A. C. P. 191, 64.
Chlorethylacetylene tetracarbonic ether.	$C_{16} H_{25} Cl O_8$	1.076, 20°	Bischoff and Rach. Ber. 17, 2786.
Citraconyl chloride	$C_5 H_4 Cl_2 O_2$	1.40, 15°	Gerhardt and Chiozza. J. 6, 394.
“ “	“	1.408, 16°.4	O. Strecker. Ber. 15, 1640.
Propylphycite trichlorhydrin.	$C_3 H_5 Cl_3 O$	1.4324, 14°	Wolff. Z. C. 12, 465.
Dichloroleic acid	$C_{18} H_{32} Cl_2 O_2$	1.082, 7°.9	Lefort. J. 6, 451.
Derivative of isobutyl alcohol.	$C_{24} H_{25} Cl O_4$	.967, 15°	Boquillon. J. C. S. 48.
Derivative of isohexic acid	$C_4 H_4 Cl_2 O$	1.471, 10°	Demarçay. Ber. 12, 380.
Chlorphenol	$C_6 H_5 Cl O$	1.306, 20°.5	Petersen and Baehr-Predari. A. C. P. 157, 125.
Chlormethylphenol	$C_7 H_7 Cl O$	1.182, 9°	Henry. Z. C. 13, 247.
Chlorparakresol	“	1.2106, 25°	Schall and Dralle. Ber. 17, 2529.
Chlormethylparakresol	$C_8 H_9 Cl O$	1.1493, 25°	“ “
Chlorethylphenol	“	1.106, 9°	Henry. Z. C. 13, 247.
Methylchlorphenetol. α	$C_9 H_{11} Cl O$	1.127, 19°.5	Wroblevsky. Z. C. 13, 164.
“ β	“	1.131, 18°	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Chloranethol	$C_{10}H_{11}ClO$	1.1154, 0°	Ladenburg. Z. C. 12, 575.
"	"	1.191, 20°	Landolph. C. R. 82, 227.
Metachlorsalicyl	$C_7H_5ClO_2$	1.29, 8°	Henry. J. 22, 509.
Metachlorbenzoic acid	"	1.29	St. Evre. J. 1, 529.
Ethyl metachlorbenzoate	$C_9H_{10}ClO_2$	.981, 10°	" "
Ethyl orthodichlorbenzoate.	$C_9H_8Cl_2O_2$	1.3278, 0°	Beilstein. Ber. 8, 435.
Chlorisopropyl benzoate	$C_{10}H_{11}ClO_2$	1.172, 19°	Morley and Green. J. C. S. 47, 135.
"	"	1.149, 45°	
Derivative of benzoic ether	$C_{18}H_{16}Cl_6O_3$	1.346, 10°.8	Malaguti. Ann. (2), 70, 375.
Benzyl monochloracetate	$C_9H_9ClO_2$	1.2223, 4°	Seubert. Ber. 21, 281.
Benzyl dichloracetate	$C_9H_8Cl_2O_2$	1.3130, 4°	" "
Benzyl trichloracetate	$C_9H_7Cl_3O_2$	1.3887, 4°	" "
Benzoyl chloride	C_7H_5ClO	1.196	Wöhler and Liebig. A. C. P. 3, 262.
"	"	1.250, 15°	Cahours. J. 1, 532.
"	"	1.2324, 0°	Kopp. A. C. P. 95, 307.
"	"	1.2142, 19°	
"	"	.9857, 198°	Ramsay. J. C. S. 35, 463.
"	"	1.2122, 20°	Brühl. A. C. P. 235, 1.
Chlorodraacylic chloride	$C_7H_4Cl_2O$	1.377	Emmerling. Ber. 8, 881.
Toluyll chloride	C_8H_7ClO	1.175	Cahours. J. 11, 265.
Phenylacetic chloride	"	1.16817, 20°	Anschütz and Berns. Ber. 20, 1390.
Cumyl chloride	$C_{10}H_{11}ClO$	1.07, 15°	Cahours. J. 1, 534.
Anisyl chloride	$C_8H_7ClO_2$	1.261, 15°	Cahours. J. 1, 538.
Cinnamyl chloride	C_9H_7ClO	1.207, 16°	Cahours. J. 1, 535.
Phthalyl chloride	$C_8H_4Cl_2O_2$	1.0489, 20°	Brühl. A. C. P. 235, 1.
Dichloracetophenone	$C_8H_6Cl_2O$	1.338, 15°	Gautier. Ber. 20, ref. 12.
Trichloracetophenone	$C_8H_5Cl_3O$	1.427, 15°	" "
Chlorobenzyl ethylate	$C_9H_{11}ClO$	1.121, 14°	Naquet. J. 15, 420.
Ethyl benzylchloromalonate.	$C_{14}H_{17}ClO_4$	1.150, 19°	Conrad. Ber. 13, 2159.
Benzodichlorhydrin	$C_{10}H_{10}Cl_2O_2$	1.441, 8°	Truchot. J. 18, 503.
Trichlorphenomalic acid	$C_7H_7Cl_3O_5$	1.5	Carius. J. 1866, 561.
Tetrachlorethyl camphorate.	$C_{14}H_{20}Cl_4O_4$	1.386, 14°	Malaguti. Ann. (2), 70, 360.
Santonyl chloride		1.1644	Carnelutti and Nasini. Ber. 13, 2210.
Derivative of bergamot oil	$6(C_{10}H_{16}). 2HCl. H_2O$	.896	Ohme. A. C. P. 31, 318.

LIII. COMPOUNDS CONTAINING C, CL, N, OR C, H, CL, N.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Chloracetonitrile -----	$C_2 H_2 Cl N$ -----	1.204, 11°.2 ---	Bisschopinck. B. S. C. 20, 450.
“ -----	“ -----	1.193, 20° ---	Engler. Ber. 6, 1003.
Dichloracetonitrile -----	$C_2 H Cl_2 N$ -----	1.374, 11°.4 ---	Bisschopinck. B. S. C. 20, 450.
Trichloracetonitrile -----	$C_2 Cl_3 N$ -----	1.444 -----	Dumas. J. 1, 593.
“ -----	“ -----	1.439, 12°.2 ---	Bisschopinck. B. S. C. 20, 450.
Dichlorpropionitrile -----	$C_3 H_3 Cl_2 N$ -----	1.431, 15° ---	Otto. J. 13, 400.
γ Chlorobutyronitrile -----	$C_4 H_6 Cl N$ -----	1.1620, 10° ---	Henry. C. R. 101, 1158.
Dichlorethylamine -----	$C_2 H_5 Cl_2 N$ -----	1.2397, 5° ---	} Tscherniak. Ber. 9, 147.
“ -----	“ -----	1.2300, 15° ---	
Chloroxalmethylin -----	$C_4 H_5 Cl N_2$ -----	1.2473, 16° ---	Wallach and Schulze. Ber. 14, 424.
Chloroxalethylin -----	$C_6 H_9 Cl N_2$ -----	1.1420, 15° ---	Wallach. Ber. 7, 328.
“ -----	“ -----	1.142 -----	Wallach and Stricker. Ber. 13, 512.
Chloroxalpropylin -----	$C_8 H_{13} Cl N_2$ -----	1.0900 -----	Wallach and Schulze. Ber. 14, 424.
Orthochloraniline -----	$C_6 H_6 Cl N$ -----	1.2338, 0° ---	Beilstein and Kurbatow. Ber. 7, 487.
Metachloraniline -----	“ -----	1.2432, 0° ---	Beilstein and Kurbatow. A. C. P. 176, 45.
Chlorotoluidine. B. 222° -----	$C_7 H_8 Cl N$ -----	1.151, 20° ---	Wroblevsky. Z. C. 12, 322-544.
“ B. 238° -----	“ -----	1.1855, 20° ---	Wroblevsky. Z. C. 12, 684.
“ B. 237°—242° -----	“ -----	1.203, 19° ---	“ “
“ B. 236° -----	“ -----	1.175, 18° ---	Henry and Radziszewski. Z. C. 12, 542.
Chlorpicoline -----	$C_6 H_6 Cl N$ -----	1.146, 20° ---	Ost. J. P. C. (2), 27, 278.
Orthochlorchinoline -----	$C_9 H_6 Cl N$ -----	1.2752, 16°.2 } -----	} Bodewig. Tübingen In. Diss. 1885.
“ -----	“ -----	1.2754, 16°.6 } -----	
Parachlorchinoline -----	“ -----	1.3768, 14°.6 } -----	} “ “
“ -----	“ -----	1.3766, 15° } -----	
Chloride from methyluracil.	$C_5 H_3 N_2 Cl_3$ -----	1.6273, 21°.8 ---	Behrend. A. C. P. 229, 26.

LIV. COMPOUNDS CONTAINING C, CL, N, O, OR C, H, CL, N, O.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Chloronitromethane -----	$C H_2 Cl N O_2$ -----	1.466, 15° -----	Tscherniak. Ber. 8, 609.
Dichlordinitromethane----	$C Cl_2 N_2 O_4$ -----	1.685, 15° -----	Marignac. Watts' Dict.
Chlorpicerin -----	$C Cl_3 N O_2$ -----	1.6657 -----	Stenhouse. J. 1, 540.
“ -----	“ -----	1.69225, 0° -----	} Thorpe. J. C. S. 37, 371.
“ -----	“ -----	1.48444, 111°.9 -----	
Dichloramyl nitrite-----	$C_5 H_9 Cl_2 N O_2$ -----	1.233, 12° -----	Guthrie. J. 11, 404.
Trichloracetyl cyanide----	$C_3 Cl_3 N O$ -----	1.559, 15° -----	Hofferichter. J. P. C. (2), 20, 195.
Trichloracetic dimethyl- amide.	$C_4 H_6 Cl_3 N O$ -----	1.441, 15° -----	Franchimont and Klobbie. Ber. 20, ref. 690.
Ethylene chloronitrin----	$C_2 H_4 Cl N O_3$ -----	1.378, 21° -----	Henry. Ann. (4), 27, 243.
Propylene chloronitrin----	$C_3 H_6 Cl N O_3$ -----	1.28, 12° -----	“ “
Dichlormethoxylaceto n i- tril.	$C_3 H_3 Cl_2 N O$ -----	1.3885 -----	Bauer. A. C. P. 229, 163.
Dichlorethoxylacetonitril.	$C_4 H_5 Cl_2 N O$ -----	1.3394, 15°.5--	“ “
Dichlorpropoxylaceto n i- tril.	$C_5 H_7 Cl_2 N O$ -----	1.2382, 15°.5--	“ “
Dichlorisobutoxylacetoni- tril.	$C_6 H_9 Cl_2 N O$ -----	1.1226, 15°.5--	“ “
Monochlordinitrin-----	$C_3 H_5 Cl N_2 O_6$ -----	1.5112, 9° -----	Henry. A. C. P. 155, 168.
Dichlormononitrin -----	$C_3 H_5 Cl_2 N O_3$ -----	1.465, 10° -----	“ “
Chlorazol-----	$C_4 H_3 Cl_3 N_2 O_4$ -----	1.555 -----	Mühlhäuser. J. 7, 671.
Dichlornitrophenol -----	$C_6 H_3 Cl_2 N O_3$ -----	1.59 -----	Fischer. A. C. P., 7th Supp., 185.
Chlornitrobenzene-----	$C_6 H_4 Cl N O_2$ -----	1.377, 0° -----	Sokoloff. J. 19, 552.
“ -----	“ -----	1.358, 0° -----	“ “
“ -----	“ -----	1.368, 22° -----	Jungfleisch. J. 21, 345.
“ Meta --	“ -----	1.534 -----	Schröder. Ber. 13, 1070.
“ Para --	“ -----	1.380, 22° -----	Jungfleisch. J. 21, 343.
Chlordinitrobenzene -----	$C_6 H_3 Cl_2 N_2 O_4$ -----	1.697, 22° -----	Jungfleisch. J. 21, 345.
“ -----	“ -----	1.6867, 16°.5--	Jungfleisch. J. 21, 346.
“ -----	“ -----	1.72, 18° -----	Engelhardt and Latschinoff. Z. C. 13, 232.
Dichlornitrobenzene -----	$C_6 H_3 Cl_2 N O_2$ -----	1.669, 22° -----	Jungfleisch. J. 21, 348.
Trichlornitrobenzene ----	$C_6 H_2 Cl_3 N O_2$ -----	1.790, 22° -----	Jungfleisch. J. 21, 351.
Dichlordinitrobenzene ----	$C_6 H_2 Cl_2 N_2 O_4$ -----	1.7103, 16° -----	Jungfleisch. J. 21, 348.
Trichlordinitrobenzene----	$C_6 H Cl_3 N_2 O_4$ -----	1.850, 25° -----	Jungfleisch. J. 21, 352.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Tetrachlornitrobenzene	$C_6 H Cl_4 N O_2$	1.744, 25°	Jungfleisch. J. 21, 353.
Pentachlornitrobenzene	$C_6 Cl_5 N O_2$	1.718, 25°	Jungfleisch. J. 21, 354.
Chlornitrotoluene	$C_7 H_6 Cl N O_2$	1.307, 18°	Wroblevsky. Z. C. 12, 683.
"	"	1.3259, 18°	" "
"	"	1.300, 20°	Wroblevsky. Ber. 7, 1062.
Parachlormetanitrotoluene.	"	1.297, 22°	Gattermann and Kaiser. Ber. 18, 2600.
Dichlornitrotoluene	$C_7 H_5 Cl_2 N O_2$	1.455, 17°	Wroblevsky and Pirogoff. Ber 3, 203.
Derivative of acetanilide	$C_8 H_8 Cl_3 N O_2$	1.3893, 20°	Witt. Ber. 8, 1227.
Derivative of protein	$C_{12} H_{12} Cl_3 N O_2$	1.628	Mühlhäuser. J. 7, 671.
" " "	$C_{12} H_{12} Cl_3 N O_4$	1.360	" "

LV. COMPOUNDS CONTAINING C, H, AND BR.

1st. Bromides of the Paraffin Series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl bromide	$C H_3 Br$	1.66443, 0°	Pierre. C. R. 27, 213.
"	"	1.732	Two lots. Merrill. J. P. C. (2), 18, 293.
"	"	1.7116	
"	"	1.73306, 15°	
"	"	1.72345, 25°	Perkin. J. P. C. (2), 31, 481.
"	"	1.46576, 15°	
"	"	1.45967, 18°	
"	"	1.45554, 20°	Weegmann. Z. P. C. 2, 218.
"	"	1.45349, 21°	
"	"	1.44733, 24°	
"	"	1.44122, 27°	
Ethyl bromide	$C_2 H_5 Br$	1.40	Löwig. A. C. P. 3, 292.
"	"	1.47329, 0°	Pierre. C. R. 27, 213.
"	"	1.4600, 20°	Haagen. P. A. 131, 117.
"	"	1.4621, 9°	Dehn. A. C. P., 4th Supp., 85.
"	"	1.4685, 13°.5	Linnemann. A. C. P. 160, 195.
"	"	1.4189, 15°	Mendelejeff. J. 13, 7.
"	"	1.4775, 5°-10°	Regnault. P. A. 62, 50.
"	"	1.4679, 10°-15°	
"	"	1.4582, 15°-20°	
"	"	1.47, 15°	Gladstone and Tribe. J. C. S. (2), 12, 410.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethyl bromide -----	C_2H_5Br -----	1.4069, 20° -----	Naumann. Ber. 10, 2016.
“ “ -----	“ -----	1.4579, 14° -----	DeHeen. Bei. 5, 105.
“ “ -----	“ -----	1.4134, 38°.4 -----	Schiff. Ber. 19, 560.
“ “ -----	“ -----	1.44988, 15° -----	Perkin. J. P. C. (2), 31, 481.
“ “ -----	“ -----	1.43250, 25° -----	
Propyl bromide -----	C_3H_7Br -----	1.353, 16° -----	Chapman and Smith. J. 22, 360.
“ “ -----	“ -----	1.388, 0° -----	Rossi. A. C. P. 159, 79.
“ “ -----	“ -----	1.3497, 0° -----	Pierre and Puchot. Ann. (4), 22, 284.
“ “ -----	“ -----	1.301, 30°.15 -----	
“ “ -----	“ -----	1.2589, 54°.2 -----	
“ “ -----	“ -----	1.3577, 16° -----	Linnemann. A. C. P. 161, 40.
“ “ -----	“ -----	1.3520 -----	Brühl. A. C. P. 203, 1.
“ “ -----	“ -----	1.3529 -----	
“ “ -----	“ -----	1.3617, 14° -----	DeHeen. Bei. 5, 115.
“ “ -----	“ -----	1.3835, 0° -----	Zander. A. C. P. 214, 181.
“ “ -----	“ -----	1.2639, 71° -----	
“ “ -----	“ -----	1.36110, 15° -----	Perkin. J. P. C. (2), 31, 481.
“ “ -----	“ -----	1.34739, 25° -----	
Isopropyl bromide -----	“ -----	1.320, 13° -----	Linnemann. J. 18, 489.
“ “ -----	“ -----	1.33, 21° -----	Linnemann.
“ “ -----	“ -----	1.248, 20° -----	Linnemann. A. C. P. 161, 18.
“ “ -----	“ -----	1.2997 -----	Three lots. Brühl. A. C. P. 203, 1.
“ “ -----	“ -----	1.3097 -----	
“ “ -----	“ -----	1.3117 -----	
“ “ -----	“ -----	1.3397, 0° -----	Zander. A. C. P. 214, 181.
“ “ -----	“ -----	1.2368, 60° -----	
“ “ -----	“ -----	1.31978, 15° -----	Perkin. J. P. C. (2), 31, 481.
“ “ -----	“ -----	1.30522, 25° -----	
Butyl bromide -----	C_4H_9Br -----	1.305, 0° -----	Lieben and Rossi. A. C. P. 158, 137.
“ “ -----	“ -----	1.2792, 20° -----	
“ “ -----	“ -----	1.2571, 40° -----	
“ “ -----	“ -----	1.2990, 20° -----	Linnemann. Ann. (4), 27, 268.
“ “ -----	“ -----	1.2605, 14° -----	DeHeen. Bei. 5, 105.
Isobutyl bromide -----	“ -----	1.274, 16° -----	Wurtz. J. 7, 572.
“ “ -----	“ -----	1.2702, 16° -----	Chapman and Smith. J. C. S. 22, 153.
“ “ -----	“ -----	1.249, 0° -----	Pierre and Puchot. Ann. (4), 22, 314.
“ “ -----	“ -----	1.191, 40°.2 -----	
“ “ -----	“ -----	1.1408, 73°.5 -----	
“ “ -----	“ -----	1.2038, 16° -----	Linnemann. A. C. P. 162, 1.
“ “ -----	“ -----	1.1456, 90°.5 -----	Schiff. Bei. 9, 559.
“ “ -----	“ -----	1.27221, 15° -----	Perkin. J. P. C. (2), 31, 481.
“ “ -----	“ -----	1.25984, 25° -----	
Trimethylcarbyl bromide -----	“ -----	1.215, 20° -----	Roozeboom. Ber. 14, 2396.
“ “ -----	“ -----	1.20200, 15° -----	Perkin. J. P. C. (2), 31, 481.
“ “ -----	“ -----	1.18922, 25° -----	
Normal pentyl bromide -----	$C_5H_{11}Br$ -----	1.246, 0° -----	Lieben and Rossi. A. C. P. 159, 70.
“ “ -----	“ -----	1.2234, 20° -----	
“ “ -----	“ -----	1.2044, 40° -----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Amyl bromide -----	$C_5 H_{11} Br$ -----	1.16576, 0° ---	Pierre. C. R. 27, 213.
" " -----	" -----	1.217, 16° -----	Chapman and Smith. J. 22, 367.
" " -----	" -----	1.2045, 20° ---	Haagen. P. A. 131, 117.
" " -----	" -----	1.2059, 15°.7--	Mendelejeff. J. 13, 7.
" " -----	" -----	1.0502, 120° --	Ramsay. J. C. S. 35, 463.
" " -----	" -----	1.2002, 14° ---	De Heen. Bei. 5, 105.
" " -----	" -----	1.0126 } 117°.1	{ Schiff. Ber. 14, 2766.
" " -----	" -----	1.0127 }	
" " -----	" -----	1.2058, 22° ---	Lachowicz. A. C. P. 220, 171.
" " -----	" -----	1.0881, 118°.5--	Schiff. Ber. 19, 560.
" " Active -----	" -----	1.225, 15° -----	Le Bel. B. S. C. 25, 546.
" " Inactive -----	" -----	1.2358, 0° -----	Balbiano. Ber. 9, 1437.
" " -----	" -----	1.21927, 15° } -----	Perkin. J. P. C. (2), 31, 481.
" " -----	" -----	1.20834, 25° }	
Normal hexyl bromide ---	$C_6 H_{13} Br$ -----	1.1935, 0° --	Lieben and Janecek. J. R. C. 5, 156.
" " " -----	" -----	1.1725, 20° -----	
" " " -----	" -----	1.1561, 40° -----	
Normal heptyl bromide --	$C_7 H_{15} Br$ -----	1.133, 16° -----	Cross. J. C. S. 32, 123.
Secondary heptyl bromide	" -----	1.422, 17°.5--	Venable. Ber. 13, 1650.
Normal octyl bromide ---	$C_8 H_{17} Br$ -----	1.116, 16° -----	Zincke. J. 22, 371.
" " " -----	" -----	1.11798, 15° } -----	Perkin. J. P. C. (2), 31, 481.
" " " -----	" -----	1.10993, 25° }	
Secondary octyl bromide -	" -----	1.0989, 22° ---	Lachowicz. A. C. P. 220, 185.

2d. Bromides of the Series $C_n H_{2n} Br_2$.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methylene bromide -----	$C H_2 Br_2$ -----	2.0844, 11°.5--	Steiner. Ber. 7, 507.
" " -----	" -----	2.4930, 0° -----	Henry. Ann. (5), 30, 266.
" " -----	" -----	2.49850 } 15°	{ Perkin. J. P. C. (2), 32, 523.
" " -----	" -----	2.499922 }	
" " -----	" -----	2.47849 } 25°	
" " -----	" -----	2.47745 }	
Ethylene bromide -----	$C H_2 Br. C H_2 Br$ --	2.164, 21° -----	Regnault. Ann. (2), 59, 358.
" " -----	" -----	2.128, 13° -----	D'Arcet. J. P. C. 5, 28.
" " -----	" -----	2.16292, 20°.1--	Pierre. C. R. 27, 213.
" " -----	" -----	2.179 -----	Butlerow. J. 14, 652.
" " -----	" -----	2.1827, 20° ---	Haagen. P. A. 131, 117.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethylene bromide -----	$C H_2 Br. C H_2 Br$ --	2.198, 10° ----	Reboul. Z. C. 13, 200.
“ “ -----	“ --	2.21324, 0° ----	} Thorpe. J. C. S. 37, 371.
“ “ -----	“ --	1.93124, 131°.45	
“ “ -----	“ --	2.1785, 20° } ----	} Anschütz. A. C. P. 221, 133.
“ “ -----	“ --	2.1767, 21°.5 } ----	
“ “ -----	“ --	1.9246, 130°.3	Schiff. Ber. 19, 560.
“ “ -----	“ --	2.18895, 15° ----	} Perkin. J. P. C. (2), 32, 523.
“ “ -----	“ --	2.17271 } 25°	
“ “ -----	“ --	2.17197 } 25°	
“ “ -----	“ --	2.17681, 20° ----	Weegmann. Z. P. C. 2, 218.
Ethylidene bromide -----	$C H_3. C H Br_2$ -----	2.135, 0° ----	Caventou. J. 14, 608.
“ “ -----	“ -----	2.129 } 10° {	} Reboul. Z. C. 13, 200.
“ “ -----	“ -----	2.132 } 10° {	
“ “ -----	“ -----	2.0822, 21°.5 ----	Anschütz. A. C. P. 221, 133.
“ “ -----	“ -----	2.10006, 17°.5	} Angelbis Freiburg Inaug. Diss. 1884.
“ “ -----	“ -----	2.08905, 20°.5	
“ “ -----	“ -----	2.10297, 15° } ----	} Perkin. J. P. C. (2), 32, 523.
“ “ -----	“ -----	2.08540, 25° } ----	
“ “ -----	“ -----	2.05545, 20° ----	Weegmann. Z. P. C. 2, 218.
Trimethylene bromide ----	$CH_2 Br. CH_2. CH_2 Br$ ----	2.0177, 0° ----	Geromont. A. C. P. 158, 370.
“ “ -----	“ --	1.9839, 13°.5 ----	Reboul. J. C. S. 36, 127.
“ “ -----	“ --	1.9228 -----	Freund. Ber. 14, 2270.
“ “ -----	“ --	2.0060, 0° -- } ----	} Zander. A. C. P. 214, 181.
“ “ -----	“ --	1.7101, 165° } ----	
“ “ -----	“ --	1.98236, 15° } ----	} Perkin. J. P. C. (2), 32, 523.
“ “ -----	“ --	1.96836, 25° } ----	
Propylene bromide -----	$CH_3. CH Br. CH_2 Br$ -----	1.7 -----	Reynolds. J. 3, 495.
“ “ -----	“ --	1.974 -----	Cahours. J. 3, 496.
“ “ -----	“ --	1.955, 9° -----	Reboul. Z. C. 13, 200.
“ “ -----	“ --	1.954, 15° -- } ----	} Linnemann. A. C. P. 136, 53.
“ “ -----	“ --	1.950, 16° -- } ----	
“ “ -----	“ --	1.943, 17° -----	Linnemann. A. C. P. 138, 123.
“ “ -----	“ --	1.972, 0° ---- } ----	} Erlenmeyer. A. C. P. 139, 226.
“ “ -----	“ --	1.946, 17° -- } ----	
“ “ -----	“ --	1.9586, 0° ---- } ----	} Two products. Friedel and Ladenburg. B. S. C. 8, 146.
“ “ -----	“ --	1.9256, 20° } ----	
“ “ -----	“ --	1.9710, 0° -- } ----	
“ “ -----	“ --	1.9383, 20° } ----	} Linnemann. A. C. P. 161, 42.
“ “ -----	“ --	1.9463, 17° } ----	
“ “ -----	“ --	1.9465, 15° } ----	} Zander. A. C. P. 214, 181.
“ “ -----	“ --	1.9617, 0° -----	
“ “ -----	“ --	1.6944, 141°.7	} Gladstone. Bei. 9, 249.
“ “ -----	“ --	1.8893, 18° } ----	
“ “ -----	“ --	1.910, 21° -- } ----	} Perkin. J. P. C. (2), 32, 523.
“ “ -----	“ --	1.94426 } 15°	
“ “ -----	“ --	1.94474 } 15°	
“ “ -----	“ --	1.93004 } 25°	
“ “ -----	“ --	1.93030 } 25°	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Dimethylmethylenebromide. Methylbromacetol.	$\{ \text{CH}_3. \text{CBr}_2. \text{CH}_3 \}$	$\{ 1.8149, 0^\circ \}$	$\{ \text{Friedel and Ladenburg. B. S. C. 8, 150.}$
" "	"	$1.7825, 20^\circ \}$	$\text{Reboul. Z. C. 13, 200.}$
" "	"	$1.895, 9^\circ$	Reboul.
" "	"	$1.875, 10^\circ$	$\text{Perkin. J. P. C. (2), 32, 523.}$
" "	"	$1.84761, 15^\circ$	$\text{Wurtz. J. 22, 365.}$
" "	"	$1.83140, 25^\circ$	$\{ \text{Grabowsky and Saytzeff. A. C. P. 179, 332.}$
α Butylene bromide	$\text{C}_2\text{H}_5. \text{CHBr. CH}_2\text{Br}$	$1.876, 0^\circ$	$\text{Wurtz. J. 20, 573.}$
" "	"	$1.8503, 0^\circ$	$\{ \text{Puchot. Ann. (5), 28, 543.}$
" "	"	$1.8204, 20^\circ$	$\{ \text{Perkin. J. P. C. (2), 32, 523.}$
β Butylene bromide	$\text{CH}_3. (\text{CHBr})_2. \text{CH}_3$	$1.8299 \}$	$\text{Wurtz. J. 20, 573.}$
" "	"	$1.8119 \}$	$\text{Puchot. Ann. (5), 28, 543.}$
" "	"	$1.8053, 0^\circ$	$\{ \text{Perkin. J. P. C. (2), 32, 523.}$
" "	"	$1.7215, 50^\circ.3$	$\{ \text{Wagner and Saytzeff. A. C. P. 179, 308.}$
" "	"	$1.6378, 100^\circ$	$\text{Helbing. A. C. P. 172, 281.}$
" "	"	$1.74343 \}$	$\text{Gladstone. Bei. 9, 249.}$
" "	"	$1.75586 \}$	$\{ \text{Perkin. J. P. C. (2), 32, 523.}$
" "	"	$1.73083 \}$	$\text{Pelouze and Cahours. J. 16, 526.}$
" "	"	$1.74294 \}$	$\text{Thorpe and Young. A. C. P. 165, 1.}$
Isobutylene bromide	$\text{C}_4\text{H}_8\text{Br}_2$	$1.798, 14^\circ$	$\text{Hecht and Strauss. A. C. P. 172, 62.}$
" "	"	$1.809, 17^\circ$	$\text{Helbing. A. C. P. 172, 281.}$
" "	"	$1.808, 24^\circ$	$\text{Thorpe and Young. A. C. P. 165, 1.}$
Ethylmethylethylene bromide.	$\text{C}_2\text{H}_5. (\text{CHBr})_2. \text{CH}_3$	$1.7087, 0^\circ$	$\text{Wagner and Saytzeff. A. C. P. 179, 308.}$
" "	"	$1.6868, 14^\circ$	$\text{Helbing. A. C. P. 172, 281.}$
Isoamylen bromide	$\text{C}_5\text{H}_{10}\text{Br}_2$	$1.3443, 0^\circ$	$\text{Gladstone. Bei. 9, 249.}$
" "	"	$1.656, 21^\circ$	$\{ \text{Perkin. J. P. C. (2), 32, 523.}$
" "	"	$1.63699 \}$	$\text{Pelouze and Cahours. J. 16, 526.}$
" "	"	$1.64000 \}$	$\text{Thorpe and Young. A. C. P. 165, 1.}$
" "	"	$1.62595 \}$	$\text{Hecht and Strauss. A. C. P. 172, 62.}$
" "	"	$1.62921 \}$	$\text{Helbing. A. C. P. 172, 281.}$
Hexylene bromide	$\text{C}_6\text{H}_{12}\text{Br}_2$	$1.582, 19^\circ$	$\text{Thorpe and Young. A. C. P. 165, 1.}$
" "	"	$1.5975, 18^\circ$	$\text{Hecht and Strauss. A. C. P. 172, 62.}$
" "	"	$1.5967, 20^\circ$	$\text{Helbing. A. C. P. 172, 281.}$
" "	"	$1.6058, 0^\circ$	$\text{Thorpe and Young. A. C. P. 165, 1.}$
" "	"	$1.5809, 19^\circ$	$\text{Hecht and Strauss. A. C. P. 172, 62.}$
" "	"	$1.6497, 0^\circ$	$\text{Helbing. A. C. P. 172, 281.}$
Heptylene bromide	$\text{C}_7\text{H}_{14}\text{Br}_2$	$1.5146, 18^\circ.5$	$\text{Thorpe and Young. A. C. P. 165, 1.}$

3d. Miscellaneous Non-Aromatic Bromides.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Bromoform	C H Br_3	2.13	Löwig. A. C. P. 3, 296.
"	"	2.9, 12°	Cahours. J. 1, 501.
"	"	2.775, 14°.5	Schmidt. Ber. 10, 194.
"	"	2.81185, 8°.56	} Thorpe. J. C. S. 37, 201 and 371.
"	"	2.43611, 151°.2	
"	"	2.90246	} Perkin. J. P. C. (2), 32, 523.
"	"	2.90450	
"	"	2.88253	
"	"	2.88421	
Bromethylene dibromide	$\text{C H}_2 \text{ Br. C H Br}_2$	2.620, 23°	Wurtz. J. 10, 461.
"	"	2.663, 0°	Simpson. J. 10, 461.
"	"	2.659, 0°	Caventou. J. 14, 608.
"	"	2.624, 16°	Tawildarow. A. C. P. 176, 21.
"	"	2.65, 0°	Demole. Ber. 9, 49.
"	"	2.6189, 17°.5	} Anschütz. A. C. P. 221, 61.
"	"	2.6107, 21°.5	
"	"	2.57896, 20°	Weegmann. Z. P. C. 2, 218.
Tetrabromethane	$\text{C H}_2 \text{ Br. C Br}_3$	2.88, 22°	Reboul. Z. C. 13, 200.
"	"	2.93	Bourgoin. J. C. S. 32, 443.
"	"	2.9292, 17°.5	} Anschütz. A. C. P. 221, 133.
"	"	2.9216, 21°.5	
"	"	2.88249, 16°.6	} Weegmann. Z. P. C. 2, 218.
"	"	2.87687, 19°.1	
"	"	2.87482, 20°	
"	"	2.87214, 21°.2	
"	"	2.86512, 24°.3	
"	"	2.85836, 27°.3	
"	"	2.85189, 30°.2	} Sabanejeff. A. C. P. 178, 114.
Acetylene tetrabromide	$\text{C H Br}_2 \text{ C H Br}_2$	2.848, 21°.5	
"	"	2.9469	} Anschütz. Ber. 12, 2075.
"	"	2.9517	
"	"	2.9708	} Anschütz. A. C. P. 221, 133.
"	"	2.9712	
"	"	2.9629, 21°.5	} Eltzbacher. Bonn Inaug. Diss. 1884.
"	"	2.92011, 17°.5	
"	"	2.96725, 20°	Weegmann. Z. P. C. 2, 218.
Bromethylene, or vinyl bromide.	$\text{C}_2 \text{ H}_3 \text{ Br}$	1.52	Watts' Dictionary.
"	"	1.5286, 11°	} Anschütz. A. C. P. 221, 133.
"	"	1.5167, 14°	
"	"	1.52504, 9°.6	Perkin. J. P. C. (2), 32, 523.
Dibromethylene	$\text{C}_2 \text{ H}_2 \text{ Br}_2$	3.038, 10°	} Sawitsch. J. 13, 431.
"	"	3.053, 14°.5	
"	"	2.1780, 20°.6	Anschütz. A. C. P. 221, 133.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Acetylene dibromide	$C_2 H_2 Br_2$	2.120, 17°	Tawildarow. A. C. P. 176, 23.
" "	"	2.2023, 22°.7	Sabanejeff. B. S. C. 27, 371.
" "	"	2.268, 0°	Plimpton. Ber. 14, 1812.
" "	"	2.271, 0°	Sabanejeff. Ber. 16, 1220.
" "	"	2.223, 19°	
" "	"	2.2714, 17°.5	Anschütz. A. C. P. 221, 133.
" "	"	2.2983, 0°	Weger. A. C. P. 221, 61.
" "	"	2.0352, 110°.5	
" "	"	2.22889, 20°	Weegmann. Z. P. C. 2, 218.
Tribromethylene	$C_2 H Br_3$	2.68762, 20°	" "
Tribromopropane	$CH_3. CBr_2. CH_2 Br$	2.336	Cahours. J. 3, 496.
"	"	2.392, 23°	Wurtz. J. 10, 462.
"	"	2.39, 10°	Linnemann. J. 18, 490.
"	"	2.33, 12°	Reboul. J. C. S. 36, 127.
"	$CH_3. CHBr. CHBr_2$	2.356, 18°	Reboul. C. R. 79, 317.
Tribromhydrin	$CH_2 Br. CHBr. CH_2 Br$	2.436, 23°	Wurtz. J. 10, 463.
"	"	2.966, 0°	Perrot. J. 11, 395.
"	"	2.407, 10°	Henry. A. C. P. 154, 370.
"	"	2.41344, 15°	Perkin. J. P. C. (2), 32, 523.
"	"	2.39856, 25°	
Tetrabromopropane	$C_3 H_4 Br_4$	2.469	Cahours. J. 3, 496.
Allylene tetrabromide	$C H_3. CBr_2. CH Br_2$	2.94, 0°	Oppenheim. J. 17, 493.
Tetrabromglycide	$CHBr_2. CHBr. CH_2 Br$	2.64	Reboul. J. 13, 462.
Pentabromopropane	$C_3 H_3 Br_5$	2.601	Cahours. J. 3, 496.
α Brompropylene	$C_3 H_5 Br$	1.364, 19°.5	Reboul. C. R. 79, 317.
"	"	1.39, 9°	Reboul. J. C. S. 36, 127.
"	"	1.42077, 15°	Perkin. J. P. C. (2), 32, 523.
"	"	1.40527, 25°	
β Brompropylene	"	1.400, 13°	Linnemann. A. C. P. 136, 55.
"	"	1.410, 14°	
"	"	1.408, 19°	Linnemann. J. 19, 308.
"	"	1.4110, 15°	Linnemann. A. C. P. 161, 18.
"	"	1.428, 19°.5	Reboul. C. R. 79, 317.
Allyl bromide	"	1.472	Cahours. J. 3, 496.
"	"	1.451, 0°	Tollens. J. P. C. 107, 185.
"	"	1.4385, 15°	
"	"	1.3609, 62°	Tollens and Henninger. Z. C. 12, 88
"	"	1.4507, 0°	
"	"	1.461, 0°	Tollens. A. C. P. 156, 153.
"	"	1.436, 15°	
"	"	1.4593, 0°	Zander. A. C. P. 214, 181.
"	"	1.3333, 70°.5	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Allyl bromide	$C_3 H_5 Br$	1.396, 20°.5	Gladstone. Bei. 9,
" "	"	1.3867, 24°.5	249.
" "	"	1.3980, 20°	Brühl. A. C. P.
" "	"	1.42532, 15°	235, 1.
" "	"	1.41057, 25°	Perkin. J. P. C. (2),
Epidibromhydrin	$C_3 H_4 Br_2$	2.06, 11°	32, 523.
Allylene bromide	"	1.950	Reboul. J. 13, 461.
" "	"	2.05, 0°	Cahours. J. 3, 496.
" "	"	2.00, 15°	Oppenheim. J. 17,
" "	"	1.98, 15°	493.
Propargyl tribromide	$C_3 H_3 Br_3$	2.53, 10°	Borsche and Fittig.
Propargyl bromide	$C_3 H_3 Br$	1.52, 20°	J. 18, 314.
" "	"	1.59, 11°	Linnemann. J. 18,
Propargyl pentabromide	$C_3 H_3 Br_5$	3.01, 10°	490.
Tribromisobutane	$C_4 H_7 Br_3$	2.187, 17°	Henry. Ber. 7, 761.
Bromamylene	$C_5 H_9 Br$	1.22, 19°	Henry. B. S. C. 20,
Isoprene bromide	"	1.175, 15°	452.
Isoprene dibromide	$C_5 H_8 Br_2$	1.601, 15°	Henry. Ber. 7, 761.
Bromhexylene.	$C_6 H_{11} Br$	1.35, 12°	" "
" B. 99°-100°.	"	1.17, 15°	Norton and Wil-
" B. 138°	"	1.2205, 0°	liams. A. C. J. 9,
" B. 140°	"	1.2025, 15°	88.
Hexine dibromide	$C_6 H_{10} Br_2$	1.6977, 0°	Linnemann. Z. C.
" "	"	1.5543, 100°	11, 58.
Hexine tetrabromide	$C_6 H_{10} Br_4$	2.1625, 0°	Bouchardat. J. C. S.
Dibromdiallyl	$C_6 H_8 Br_2$	1.656	38, 323.
Dipropargyl tetrabromide	$C_6 H_6 Br_4$	2.464, 19°	" "
Conylene bromide	$C_8 H_{14} Br_2$	1.5679, 16°.25	Destrem. Ann. (5),
Bromdecylene	$C_{10} H_{19} Br$	1.109, 15°	27, 50.
Isovinyl bromide	$(C_2 H_3 Br)_n$	2.075	Reboul and Truchot.
Erythrene hexbromide	$C_4 H_4 Br_6$	2.9, 15°, l.	J. 20, 587.
" "	"	3.4, solid	Hecht and Strauss.
			A. C. P. 172, 62.
			Hecht. Ber. 11, 1054.
			" "
			Henry. J. C. S. (2),
			11, 1215.
			Henry. Ber. 7, 761.
			Wertheim. J. 15,
			367.
			Reboul and Truchot.
			J. 28, 588.
			Baumann. A. C. P.
			163, 308.
			Colson. B. S. C. 48,
			52. Two modifi-
			cations.

4th. Aromatic Compounds.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Brombenzene -----	C_6H_5Br -----	1.519 } 0° --- {	Ladenburg. Ber. 7, 1685.
" -----	" -----	1.522 } ----- {	
" -----	" -----	1.51768, 0° -----	
" -----	" -----	1.50236, $11^\circ.46$ -----	} Adrieenz. Ber. 6, 444.
" -----	" -----	1.48977, $20^\circ.96$ -----	
" -----	" -----	1.41163, $77^\circ.76$ -----	
" -----	" -----	1.4914, 20° -----	Brühl. Bei. 4, 780.
" -----	" -----	1.5203, 0° -----	} Weger. A. C. P. 221, 61.
" -----	" -----	1.3080, $155^\circ.6$ -----	
" -----	" -----	1.4958, 16° -----	} Gladstone. Bei. 9, 249.
" -----	" -----	1.49225, 23° -----	
" -----	" -----	1.3080, 155° -----	Schiff. Bei. 9, 559.
" -----	" -----	1.3090, 156° -----	Schiff. Ber. 19, 560.
Orthodibrombenzene -----	$C_6H_4Br_2$ -----	2.003, 0° -----	} Körner. J. C. S. (3), 1, 214.
" -----	" -----	1.858, 99° -----	
Metadibrombenzene -----	" -----	1.955, $18^\circ.6$ -----	" "
Paradibrombenzene -----	" -----	2.218 } 4° --- {	} Schröder. Ber. 12, 561.
" -----	" -----	2.222 } ----- {	
" -----	" -----	1.8408, $89^\circ.3$ -----	Schiff. A. C. P. 223, 247.
Benzyl bromide -----	$C_6H_5.CH_2Br$ -----	1.438, 22° -----	Kekulé. J. 20, 662.
Orthobromtoluene -----	$C_6H_4.CH_3.Br$ -----	1.4092, $21^\circ.5$ -----	Glinzer and Fittig. J. 18, 538.
" -----	" -----	1.4109, 22° -----	Kekulé. J. 20, 663.
" -----	" -----	1.401, 18° -----	Wroblevsky. A. C. P. 168, 147.
" -----	" -----	1.2031, $182^\circ.5$ -----	Schiff. Ber. 19, 560.
Metabromtoluene -----	" -----	1.4009, 21° -----	Wroblevsky. Z. C. 13, 239.
Parabromtoluene -----	" -----	1.3999, 30° -----	Hübner and Terry. Z. C. 14, 232.
Dibromtoluene. B. 236° -----	$C_6H_3.CH_3.Br_2$ -----	1.8127, 19° -----	Wroblevsky. Z. C. 13, 239.
" B. 238° – 239° -----	" -----	1.812, 19° -----	" "
" B. 246° -----	" -----	1.812, 22° -----	Wroblevsky. Z. C. 14, 272.
Ethylbrombenzene. 1.4 -----	$C_6H_4.C_2H_5.Br$ -----	1.34, $13^\circ.5$ -----	Fittig and Koenig. J. 20, 609.
Bromxylene -----	$C_6H_3.CH_3.CH_3.Br$ -----	1.335, 21° -----	Beilstein. J. 17, 530.
" 1.2.4 -----	" -----	1.3693, 15° -----	Jacobsen. Ber. 17, 2373.
" 1.3.5 -----	" -----	1.362, 20° -----	Wroblevsky. A. C. P. 192, 215.
Metaxylyl bromide -----	$C_6H_4.CH_3.CH_2Br$ -----	1.3711, 23° -----	Radziszewski and Wispek. Ber. 15, 1745.
Orthoxylyl bromide -----	" -----	1.3811, 23° -----	Radziszewski and Wispek. Ber. 15, 1747.
Dibromorthoxylylene -----	$C_6H_2.(CH_3)_2.Br_2$ -----	1.7842, 15° -----	Jacobsen. Ber. 17, 2377.
Orthoxylylene bromide -----	$C_6H_4.(CH_2Br)_2$ -----	1.934, 0° , s. } -----	} Colson. Ann. (6), 6, 86.
" " -----	" -----	1.680, 95° , l. } -----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Orthoxylylene bromide --	$C_6 H_4 (C H_2 Br)_2$ ----	1.988 -----	Colson. C. R. 104, 429.
Metaxylylene bromide ---	“ -----	1.734, 0°, s. } 1.615, 80°, l. }	Colson. Ann. (6), 6, 86.
“ “ ---	“ -----	1.959 -----	Colson. C. R. 104, 429.
Paraxylylene bromide----	“ -----	2.010, s.----- } 1.850, 155°, l. }	Colson. Ann. (6), 6, 86.
“ “ ---	“ -----	2.012 -----	Colson. C. R. 104, 429.
Brommesitylene. 1.3.5.6 -	$C_6 H_2 (C H_3)_3 Br$ ----	1.3191, 10° ---	Fittig and J. Storer, J. 20, 704.
Isopropylbrombenzene. 1.4.	$C_6 H_4 C_3 H_7 Br$ ----	1.3223, 13° ---	Meusel. J. 20, 698.
“ “ ---	“ -----	1.3014, 15° ---	Jacobsen. Ber. 12, 430.
Dibromcymene -----	$C_{10} H_{12} Br_2$ -----	1.596 -----	Claus and Wimmel. Ber. 13, 903.
β Bromamylbenzene -----	$C_{11} H_{15} Br$ -----	1.2834, 21° ---	Dafert. M. C. 4, 621.
Benzene hexbromide----	$C_6 H_6 Br_6$ -----	2.5 + -----	Meunier. Ann. (6), 10, 223.
Bromdibenzyl-----	$C_{14} H_{13} Br$ -----	1.318, 9° -----	Stelling and Fittig.
Bromnaphthalene -----	$C_{19} H_7 Br$ -----	1.555 -----	Glaser. J. 18, 562.
“ -----	“ -----	1.503, 12° -----	Wahlforss. J. 18, 564.
“ -----	“ -----	1.48875, 16°.5- }	Nasini and Bernheimer. G. C. I. 15, 50.
“ -----	“ -----	1.47496, 28°.1- }	
“ -----	“ -----	1.42572, 77°.6- }	
“ -----	“ -----	1.5678, 16°.5 }	Gladstone. Bei. 9, 249.
“ -----	“ -----	1.5403, 17° }	
“ -----	“ -----	1.5403, 18° }	
“ β -----	“ -----	1.605, 0° -----	Roux. B. S. C. 45, 514.
α Tetrabromhydrocamphene.	$C_{10} H_{14} Br_4$ -----	2.2042 -----	Royère. Ber. 19, ref. 438.
β Tetrabromhydrocamphene.	“ -----	1.93711 -----	“ “

LVI. COMPOUNDS CONTAINING C, H, O, AND BR.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
$\alpha \beta$ Dibrompropyl alcohol	$C_3 H_6 Br_2 O$ -----	2.1682, 0° -- }	Weger. A. C. P. 221, 61.
“ “ ---	“ -----	1.7535, 219° }	
Monobromtrimethylcarbinol.	$C_4 H_9 Br O$ -----	1.429, 0° -----	Guareschi and Garzino. J. C. S. 54, 437.
Dibromhexyl alcohol ----	$C_6 H_{12} Br_2 O$ -----	1.99, 15° -----	Destrem. Ann. (5), 27, 50.
Bromethyl oxide -----	$C_4 H_9 Br O$ -----	1.3704, 0° -----	Henry. C. R. 100, 1007.
Bromacetyl bromide -----	$C_2 H_2 Br_2 O$ -----	2.317, 21°.5----	Naumann. J. 17, 322.
Propionyl bromide -----	$C_3 H_5 O. Br$ -----	1.465, 14° -----	Sestini. J. 22, 528.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Dibromacetic acid -----	$C_2 H_2 Br_2 O_2$ -----	2.25 -----	Perkin and Duppa. J. 11, 285.
Bromobutyric acid -----	$C_4 H_7 Br O_2$ -----	1.54, 15° -----	Schneider. J. 14, 457.
Bromisobutyric acid -----	" -----	1.5225, 60° -----	Helland Waldbauer. Ber. 10, 448.
" " -----	" -----	1.500, 100° -----	
Dibromobutyric acid -----	$C_4 H_6 Br_2 O_2$ -----	1.97 -----	Schneider. J. 14, 458.
Bromostearic acid -----	$C_{18} H_{35} Br O_2$ -----	1.0653, 20° -----	Oudemans. J. P. C. 89, 197.
Ethyl bromacetate -----	$C_4 H_7 Br O_2$ -----	1.5250, 18° -----	Gladstone. Bei. 9, 249.
Dibromethyl acetate -----	$C_4 H_6 Br_2 O_2$ -----	1.962, 17° -----	Kessel. Ber. 10, 1996.
Ethyl brompropionate ---	$C_5 H_9 Br O_2$ -----	1.396, 11° -----	Henry. A. C. P. 156, 176.
Methyl dibrompropio- nate. α . " -----	$C_4 H_6 Br_2 O_2$ -----	1.9043, 0° -----	Philippi. Göttingen Inaug. Diss. 1873.
" " " $\alpha \beta$ -----	" -----	1.8973, 12° -----	
" " " " -----	" -----	1.9777, 0° -----	Weger. A. C. P. 221, 61.
" " " " -----	" -----	1.6140, 205°.8 -----	
Ethyl dibrompropionate. α -----	$C_5 H_8 Br_2 O_2$ -----	1.7728, 0° -----	Philippi. Gött. In- aug. Diss. 1873.
" " " " -----	" -----	1.7536, 12° -----	
" " " β -----	" -----	1.796, 0° -----	Münder and Tollens. A. C. P. 167, 222.
" " " " -----	" -----	1.777, 15° -----	
" " " $\alpha \beta$ -----	" -----	1.8234 -----	Weger. A. C. P. 221, 61.
" " " " -----	" -----	1.8279 -----	
" " " " -----	" -----	1.4554, 214°.6 -----	
Propyl dibrompropionate. -----	$C_6 H_{10} Br_2 O_2$ -----	1.6842, 0° -----	Philippi. Gött. In- aug. Diss. 1873.
" " " α -----	" -----	1.6632, 12° -----	
" " " $\alpha \beta$ -----	" -----	1.7014, 0° -----	Weger. A. C. P. 221, 61.
" " " " -----	" -----	1.3391, 233° -----	
Butyl dibrompropionate. α -----	$C_7 H_{12} Br_2 O_2$ -----	1.6008, 0° -----	Philippi. Gött. In- aug. Diss. 1873.
" " " " -----	" -----	1.5778, 12° -----	
Methyl brombutyrate. γ -----	$C_5 H_9 Br O_2$ -----	1.450, 5° -----	Henry. C. R. 102, 368.
Ethyl brombutyrate -----	$C_6 H_{11} Br O_2$ -----	1.33, 15° -----	Schneider. J. 14, 458.
" " " -----	" -----	1.345, 12° -----	Cahours. J. 15, 248.
" " " γ -----	" -----	1.363, 5° -----	Henry. C. R. 102, 368.
Ethyl bromisobutyrate ---	" -----	1.328, 0° -----	Helland Wittekind. Ber. 7, 319.
" " " -----	" -----	1.300, 19°.5 -----	
Ethyl bromvalerate. α -----	$C_7 H_{13} Br O_2$ -----	1.226, 18° -----	Juslin. Ber. 17, 2504.
Ethyl bromethylmethyl- acetate. α . -----	" -----	1.2275, 18° -----	Böcking. A. C. P. 204, 24.
Bromal -----	$C_2 H Br_3 O$ -----	3.34 -----	Löwig. A. C. P. 3, 305.
Parabromalide -----	" -----	3.107 -----	Cloëz. J. 12, 433.
Bromacetone -----	$C_3 H_5 Br O$ -----	1.99 -----	Sokolowsky. B. S. C. 27, 371.
Dibromacetone -----	$C_3 H_4 Br_2 O$ -----	2.5 -----	" "
Hexbromethylmethyl ke- tone. -----	$C_4 H_2 Br_6 O$ -----	2.88, 0° -----	Demole. Ber. 11, 1712.
Ethylene bromhydrin ---	$C_2 H_4. Br. O H$ -----	1.66, 8° -----	Henry. Ann. (4), 27, 243.
Bromethylene bromhydrin	$C_2 H_3 Br. Br. O H$ -----	2.35, 0° -----	Demole. Ber. 9, 50.
Bromethylene bromacetic	$C_2 H_3 Br. Br. C_2 H_3 O_2$ -----	1.98, 0° -----	Demole. Ber. 9, 51.
Ethylidene bromethylate.	$C_2 H_4. Br. O C_2 H_5$ -----	1.0632, 12° -----	Henry. C. R. 100, 1007.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Trimethylene bromhydrin	$C_3 H_6 Br O H$ -----	1.5374, 20° ---	Frühling. Ber. 15, 2622.
Ethoxybromamylene-----	$C_5 H_8 Br O C_2 H_5$ --	1.23, 19° -----	Reboul. J. 17, 507.
Hexylene bromhydrin----	$C_6 H_{12} Br O H$ -----	1.2959, 11° ----	Henry. C. R. 97, 260.
Ethyl bromacetacetate ----	$C_6 H_9 Br O_3$ -----	1.511, 22° -----	Duisberg. Ber. 15, 1378.
Ethyl dibromacetacetate----	$C_6 H_8 Br_2 O_3$ -----	1.884, 25° -----	" "
Ethyl tribromacetacetate----	$C_6 H_7 Br_3 O_3$ -----	2.144, 22° -----	" "
Ethyl tetrabromacetacetate.	$C_6 H_6 Br_4 O_3$ -----	2.401, 17° -----	" "
Dibromide of dibromacetacetic ether.	$C_6 H_8 Br_4 O_3 ?$ -----	2.320, 21° -----	Conrad. A. C. P. 186, 233. Compare Ber. 15, 2133.
Ethyl bromethylacetate.	$C_8 H_{13} Br O_3$ -----	1.354 -----	Wedel. A. C. P. 219, 102.
Ethyl dibromethylacetate.	$C_8 H_{12} Br_2 O_3$ -----	1.635 -----	Wedel. A. C. P. 219, 103.
Ethyl tribromethylacetate.	$C_8 H_{11} Br_3 O_3$ -----	1.860 -----	" "
Ethyl β bromacetopropionate.	$C_7 H_{11} Br O_3$ -----	1.439, 15° -----	Conrad and Guthzeit. Ber. 17, 2286.
Ethyl brompropiopropionate.	$C_8 H_{13} Br O_3$ -----	1.337, 15° -----	Israel. A. C. P. 231, 197.
Ethyl dibrompropiopropionate.	$C_8 H_{12} Br_2 O_3$ -----	1.611, 15° -----	" "
Bromallyl alcohol -----	$C_3 H_5 Br O$ -----	1.6, 15° -----	Henry. B. S. C. 18, 232.
Bromallyl acetate -----	$C_5 H_7 Br O_2$ -----	1.57, 12° -----	" "
Allyldibrompropionate. β	$C_6 H_8 Br_2 O_2$ -----	1.843, 0° -----	Münderand Tollens. A. C. P. 167, 222.
" " -----	" " -----	1.818, 20° -----	
Dibromallyl oxide -----	$C_6 H_8 Br_2 O$ -----	1.7, 17° -----	Henry. B. S. C. 20, 452.
Brommethylallyl oxide----	$C_4 H_7 Br O$ -----	1.35, 10° -----	Henry. B. S. C. 18, 232.
Bromethylallyl oxide ----	$C_5 H_9 Br O$ -----	1.27, 12° -----	Henry. Ber. 5, 186.
Monobromhydrin-----	$C_3 H_5 Br (O H)_2$ -----	1.717, 4° -----	Veley. C. N. 47, 39.
Dibromhydrin -----	$C_3 H_5 Br_2 O H$ -----	2.11, 10° -----	Berthelot and De Luca. J. 8, 627.
" -----	" -----	2.11, 18° -----	Berthelot and De Luca. J. 9, 601.
" -----	" -----	2.02, 18°.5-----	Zotta. A. C. P. 174, 87.
Epibromhydlin -----	$C_3 H_5 Br O$ -----	1.615, 14° -----	Berthelot and De Luca. J. 9, 600.
Bromdiethylin -----	$C_3 H_5 Br (O C_2 H_5)_2$ -----	1.258, 8° -----	Henry. Ber. 4, 701.
Diethyl brommaleate ----	$C_8 H_{11} Br O_4$ -----	1.4095, 17°.5--	Anschütz and Aschman. Ber. 12, 2284.
Dibromoleic acid -----	$C_{18} H_{32} Br_2 O_2$ -----	1.272, 7°.5-----	Lefort. J. 6, 451.
Bromcitropyrotartaric anhydride.	$C_5 H_3 Br O_3$ -----	1.935, 23° -----	Bourgoin. J. Ph. C. 26, 234.
Ethyl δ brompyromucate.	$C_7 H_7 Br O_3$ -----	1.528, 0° -----	Hill and Sanger. A. C. P. 232, 52.
Orthomonobromphenol----	$C_6 H_5 Br O$ -----	1.6606, 30° ----	Körner. J. 19, 574.
Paramonobromphenol----	" -----	1.840, 15° -----	Hand. A. C. P. 234, 133.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Brommethylphenol -----	$C_7 H_7 Br O$ -----	1.494, 9° -----	Henry. Z. C. 13, 247.
Bromparakresol -----	" -----	1.5468, 24°.5 -----	Schall and Dralle. Ber. 17, 2531.
Brommethylparakresol -----	$C_8 H_9 Br O$ -----	1.4182, 24°.5 -----	" "
Bromisopropylphenol -----	$C_9 H_{11} Br O$ -----	1.981, 0° -----	Silva. B.S.C., Jan., 1870.
" -----	" -----	1.957, 12°.5 -----	
Bromallylphenol ether -----	$C_9 H_9 Br O$ -----	1.4028, 11° -----	Henry. Ber. 16, 1378.
Brommethyleugenol -----	$C_{11} H_{13} Br O_2$ -----	1.3959, 0° -----	Wassermann. C. R. 88, 1207.
Benzoyl bromide -----	$C_7 H_5 O. Br$ -----	1.5700, 15° -----	Claisen. Ber. 14, 2473.
Monobromcamphor -----	$C_{10} H_{15} Br O$ -----	1.437 -----	Schröder. Ber. 13, 1070.
" -----	" -----	1.449 -----	
Santonyl bromide -----	-----	1.4646 -----	Carnelutti and Nisini. Ber. 13, 2210.

LVII. BROMINE COMPOUNDS CONTAINING NITROGEN.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Brompicrin -----	$C Br_3 N O_2$ -----	2.811, 12°.5 -----	Bolas and Groves. Z. C. 13, 414.
" -----	" -----	2.816, 13° -----	Gladstone. Bei. 9, 249.
Tetranitroethylene bromide.	$C_2 (N O_2)_4 Br_2$ -----	1.25, 14° -----	Villiers. J. C. S. 42, 815.
Bromonitric glycol -----	$C_2 H_4 Br N O_3$ -----	1.735, 8° -----	Henry. Ann. (4), 27, 243.
Bromallyl nitrate -----	$C_3 H_4 Br N O_3$ -----	1.5, 13° -----	Henry. B. S. C. 18, 232.
Nitrobromtoluene. B. 269°	$C_7 H_5 Br N O_2$ -----	1.612, 20° -----	Wroblevsky. Z. C. 13, 240.
" B. 256°	" -----	1.631, 18° -----	Wroblevsky. Z. C. 13, 166.
Bromtoluidine. B. 240°	$C_7 H_8 Br N$ -----	1.510, 20° -----	Wroblevsky. A. C. P. 168, 147.
" B. 255°-260°	" -----	1.1442, 19° -----	Wroblevsky. A. C. P. 192, 203.
Brompyridine -----	$C_5 H_4 Br N$ -----	1.645, 0° -----	Ciamician and Dennstedt. Ber. 15, 1174.
" -----	" -----	1.646, 0° -----	Danesi. Ber. 15, 1177.
" -----	" -----	1.632, 10° -----	Hofmann. Ber. 16, 589.

LVIII. COMPOUNDS CONTAINING C, H, AND I.

1st. Iodides of the Paraffin Series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl iodide	$\text{C H}_3 \text{I}$	2.227, 22°	Dumas and Peligot. Ann. (2), 58, 30.
" "	"	2.19922, 0°	Pierre. C. R. 27, 213.
" "	"	2.2636, 20°	Haagen. P. A. 131, 117.
" "	"	2.269, 25°	Linnemann. Z. C. 11, 285.
" "	"	2.2905, 16°	Sigel. A. C. P. 170, 345.
" "	"	2.1905, 42°	Ramsay. J. C. S. 35, 463.
" "	"	2.28517, 15°	Perkin. J. P. C. (2), 31, 481.
" "	"	2.25288, 25°	
" "	"	2.3346, 0°	Dobriner. A. C. P. 243, 23.
" "	"	2.2146, 42°.8	
Ethyl iodide	$\text{C}_2 \text{H}_5 \text{I}$	1.9206, 23°.3	Gay Lussac. Ann. (1), 91, 91.
" "	"	1.92, 16°	Marchand. J. P. C. 33, 188.
" "	"	1.97546, 0°	Pierre. C. R. 27, 213.
" "	"	1.9567, 5°-10°	Regnault. P. A. 62, 50.
" "	"	1.9457, 10°-15°	
" "	"	1.9348, 15°-20°	Frankland. J. 2, 412.
" "	"	1.9464, 16°	Mendelejeff. J. 13, 7.
" "	"	1.9309, 15°	Berthelot. A. C. P. 115, 114.
" "	"	1.98, 4°	Linnemann. A. C. P. 144, 133.
" "	"	1.927, 20°	Linnemann. A. C. P. 148, 251.
" "	"	1.9265, 19°	Haagen. P. A. 131, 117.
" "	"	1.935 } 20° {	Pierre and Puchot. Ann. (4), 22, 261.
" "	"	1.938 } 20° {	
" "	"	1.979, 0°	Linnemann. A. C. P. 160, 195.
" "	"	1.907, 30°.4	
" "	"	1.9444, 14°.5	Crismer. Ber. 17, 652.
" "	"	1.944, 15°	Gladstone. Bei. 9, 249.
" "	"	1.9313, 14°	Schiff. Ber. 19, 560.
" "	"	1.8111, 72°.2	Perkin. J. P. C. (2), 31, 481.
" "	"	1.96527, 4°	
" "	"	1.94332, 15°	Dobriner. A. C. P. 243, 23.
" "	"	1.92431, 25°	
" "	"	1.9795, 0°	Berthelot and De Luca. J. 7, 452.
" "	"	1.8156, 72°.5	
Propyl iodide	$\text{C}_3 \text{H}_7 \text{I}$	1.789, 16°	Linnemann. J. 21, 433.
" "	"	1.7012, 21°	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Propyl iodide -----	$C_3 H_7 I$ -----	1.7343, 16° ---	Chapman and Smith. J. C. S. 22, 195.
" " -----	" -----	1.782, 0° -----	Rossi. A. C. P. 159, 79.
" " -----	" -----	1.7472, 16° ---	Linnemann. A. C. P. 160, 195.
" " -----	" -----	1.7377, 23° ---	Linnemann. A. C. P. 161, 25.
" " -----	" -----	1.7610, 16° ---	Linnemann. A. C. P. 161, 34.
" " -----	" -----	1.78635, 0° ---	} Brown. J. C. S. 32, 837.
" " -----	" -----	1.75035, 19°.27	
" " -----	" -----	1.74772, 20°.79	
" " -----	" -----	1.74628, 20°.91	
" " -----	" -----	1.7427, 20° ---	Brühl. A. C. P. 203, 1.
" " -----	" -----	1.7483, 14° ---	De Heen. Bei. 5, 105.
" " -----	" -----	1.5867, 102°.5	Zander. A. C. P. 214, 181.
" " -----	" -----	1.7838, 0° -----	Chancel. B. S. C. 39, 648.
" " -----	" -----	1.7508, 16° ---	Gladstone. Bei. 9, 249.
" " -----	" -----	1.7842, 0° ---	} Pierre and Puchot. Ann. (4), 22, 286.
" " -----	" -----	1.7674, 9°.1	
" " -----	" -----	1.6843, 52°.6	
" " -----	" -----	1.6373, 75°.3	
" " -----	" -----	1.76732, 10°	} Perkin. J. P. C. (2), 31, 481.
" " -----	" -----	1.75853, 15°	
" " -----	" -----	1.7829, 0° ---	} Dobriner. A. C. P. 243, 23.
" " -----	" -----	1.585, 102°.5	
Isopropyl iodide -----	" -----	1.70, 15° -----	Linnemann. J. 18, 489.
" " -----	" -----	1.714, 16° -----	Erlenmeyer. A. C. P. 126, 309.
" " -----	" -----	1.73, 0° -----	Simpson. A. C. P. 129, 128.
" " -----	" -----	1.725, 0° -----	Wurtz. See A. C. P. 136, 43.
" " -----	" -----	1.69, 15° -----	Linnemann. A. C. P., 3d Supp., 265.
" " -----	" -----	1.71, 15° -----	Linnemann. A. C. P., 3d Supp., 267.
" " -----	" -----	1.735, 0° ---	} Erlenmeyer. A. C. P. 139, 229.
" " -----	" -----	1.711, 17° ---	
" " -----	" -----	1.71732, 17° ---	} H. L. Buff. A. C. P., 4th Supp., 129.
" " -----	" -----	1.562442, 93°	
" " -----	" -----	1.70, 18° -----	Linnemann. A. C. P. 140, 178.
" " -----	" -----	1.715, 15°.5 ---	Siersch. A. C. P. 140, 142.
" " -----	" -----	1.7109, 15° ---	Linnemann. A. C. P. 161, 18.
" " -----	" -----	1.744, 0° -----	} Brown. J. C. S. 32, 837.
" " -----	" -----	1.70526, 19°.8	
" " -----	" -----	1.70506, 20°.14	
" " -----	" -----	1.70457, 21°.09	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Isopropyl iodide	C_3H_7I	1.7033, 20°	Brühl. A. C. P. 203, 1.
" "	"	1.5650, 89°	Zander. A. C. P. 214, 181.
" "	"	1.7157, 14°	Gladstone. Bei. 9, 249.
" "	"	1.71630, 15°	Perkin. J. P. C. (2), 31, 481.
" "	"	1.70049, 25°	
Butyl iodide	C_4H_9I	1.643, 0°	Lieben and Rossi. A. C. P. 158, 137.
" "	"	1.6136, 20°	
" "	"	1.5894, 40°	Linnemann. Ann. (4), 27, 268.
" "	"	1.5804, 18°	
" "	"	1.6166, 20°	Brühl. A. C. P. 203, 1.
" "	"	1.6172, 14°	De Heen. Bei. 5, 105.
" "	"	1.6476, 0°	Dobriner. A. C. P. 243, 23.
" "	"	1.4308, 129°.9	
Secondary butyl iodide	"	1.632, 0°	De Luynes. J. 17, 499.
" "	"	1.600, 20°	
" "	"	1.584, 30°	Lieben. J. 21, 439.
" "	"	1.6263, 0°	
" "	"	1.6111, 10°	Wurtz. A.C.P. 152, 23.
" "	"	1.5952, 20°	
" "	"	1.5787, 30°	Wurtz. J. 7, 573.
" "	"	1.634, 0°	
Isobutyl iodide	"	1.604, 19°	Wurtz. J. 20, 573.
" "	"	1.643, 0°	Chapman and Smith. J. C. S. 22, 156.
" "	"	1.6301, 0°	Pierre and Puchot. Ann. (4), 22, 317.
" "	"	1.6032, 16°	
" "	"	1.54816, 50°	Linnemann. A. C. P. 160, 195.
" "	"	1.6345, 0°	
" "	"	1.6214, 8°.3	Linnemann. Ann. (4), 27, 268.
" "	"	1.6387, 56°.4	
" "	"	1.464, 98°.8	Erlenmeyer and Hell. A. C. P. 160, 257.
" "	"	1.6081, 19°.5	
" "	"	1.592, 22°	Brauner. A. C. P. 192, 69.
" "	"	1.6433, 0°	
" "	"	1.6278, 10°	Brühl. A. C. P. 203, 1.
" "	"	1.6114, 20°	
" "	"	1.6401, 0°	Gladstone. Bei. 9, 249.
" "	"	1.6050, 20°	
" "	"	1.6056, 20°	Schiff. Ber. 19, 560.
" "	"	1.5982	
" "	"	1.4335, 114°.5	Perkin. J. P. C. (2), 31, 481.
" "	"	1.61385, 15°	
" "	"	1.60066, 25°	Two lots. Puchot. Ann. (5), 28, 546.
Trimethylcarbyl iodide. ?	"	1.587, 0°	
" "	"	1.501, 50°.1	Lieben and Rossi. A. C. P. 159, 70.
" "	"	1.571, 0°	
" "	"	1.479, 53°	
Normal pentyl iodide	$C_5H_{11}I$	1.5435, 0°	
" "	"	1.5174, 20°	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Normal pentyl iodide	$C_5H_{11}I$	1.4961, 40°	Lieben and Rossi. A. C. P. 159, 70.
" " "	"	1.5444, 0°	} Dobriner. A. C. P. 243, 20.
" " "	"	1.3128, 151°.	
Amyl iodide	"	1.51113, 11°.	Frankland. J. 3, 478.
"	"	1.5277, 0°	Frankland.
"	"	1.4936, 20°	Grimm. J. 7, 543.
"	"	1.4676, 0°	} Kopp. A. C. P. 95, 307.
"	"	1.4387, 22°.	
"	"	1.5087, 15°.	Mendelejeff. J. 13, 7.
"	"	1.4734, 20°	Haagen. P. A. 131, 117.
"	"	1.5005, 14°	De Heen. Bei. 5, 105.
"	"	1.5413, 0°	} Flawitzky. Ber. 15, 11.
"	"	1.5084, 23°	
"	"	1.5048, 14°	Gladstone. Bei. 9, 249.
"	"	1.3098, 148°	Schiff. Ber. 19, 560.
"	"	1.5100, 15°	} Perkin. J. P. C. (2), 31, 481.
"	"	1.49811, 25°	
" " Active	"	1.54, 15°	Le Bel. B. S. C. 25, 545.
" " "	"	1.5425, 16°	Just. A. C. P. 220, 150.
Methylpropylcarbonyl iodide	"	1.537, 0°	} Wurtz. J. 21, 446.
" " "	"	1.5219, 11°	
" " "	"	1.539, 0°	{ Wagner and Saytzeff. A. C. P. 179, 318.
" " "	"	1.510, 20°	
" " "	"	1.499, 15°	Romburgh. Ber. 16, 392.
Diethylcarbonyl iodide	"	1.528, 0°	{ Wagner and Saytzeff. A. C. P. 175, 365.
" " "	"	1.505, 16°	
" " "	"	1.4792	Gladstone. Bei. 9, 249.
" " "	"	1.528, 0°	{ Wagner and Saytzeff. A. C. P. 179, 318.
" " "	"	1.501, 20°	
Dimethylethylcarbonyl iodide.	"	1.5207, 0°	} Flawitzky. A. C. P. 179, 348.
" " "	"	1.4954, 19°	
" " "	"	1.524, 0°	} Wischnegradsky. A. C. P. 190, 334.
" " "	"	1.497, 19°	
" " "	"	1.522, 0°	} Winogradow. A. C. P. 191, 125.
" " "	"	1.498, 18°	
Hexyl iodide	$C_6H_{13}I$	1.431, 19°	Pelouze and Cahours. J. 16, 526.
" " "	"	1.4115	Franchimont and Zincke. C. N. 24, 263.
" " "	"	1.4607, 0°	} Lieben and Janecek. J. R. C. 5, 156.
" " "	"	1.4363, 20°	
" " "	"	1.4178, 40°	{ Dobriner. A. C. P. 243, 23.
" " "	"	1.4661, 0°	
" " "	"	1.2165, 177°.	} Wanklyn and Erlenmeyer. J. 14, 732.
Secondary hexyl iodide	"	1.439	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Secondary hexyl iodide	$C_6 H_{13} I$	1.4447, 0°	Wanklyn and Erlenmeyer. J. 16, 518. Hecht. A. C. P. 165, 146.
" " "	"	1.3812, 50°	
" " "	"	1.4526, 0°	
" " "	"	1.4589, 0°	} Krusemann. Ber. 9, 1468.
" " "	"	1.3938, 50°	
" " "	"	1.4477, 0°	
" " "	"	1.3808, 50°	
" " "	"	1.4487, 0°	
" " "	"	1.3839, 50°	
" " "	"	1.4193	Gladstone. Bei. 9, 249.
" " "	"	1.42694, 15°	Perkin. J. P. C. (2), 31, 481.
" " "	"	1.41631, 25°	
Dimethylisopropylcarbyl iodide.	"	1.3939, 0°	Pawlow. A. C. P. 196, 122.
" " "	"	1.3725, 19°	
Pinacolic iodide	"	1.4739, 0°	Friedel and Silva. J. C. S. (2), 11, 488.
Normal heptyl iodide	$C_7 H_{15} I$	1.346, 16°	Cross. J. C. S. 32, 123.
" " "	"	1.4008, 0°	} Dobriner. A. C. P. 243, 23.
" " "	"	1.1344, 203°.8	
Dipropylcarbyl iodide	"	1.20, 20°	Kurtz. A. C. P. 161, 205.
Normal octyl iodide	$C_8 H_{17} I$	1.338, 16°	Zincke. J. 22, 371.
" " "	"	1.355, 0°	} Krafft. Ber. 19, 2218.
" " "	"	1.337, 16°	
" " "	"	1.34069, 15°	Perkin. J. P. C. (2), 31, 481.
" " "	"	1.33163, 25°	
" " "	"	1.3533, 0°	Dobriner. A. C. P. 243, 23.
" " "	"	1.075, 225°.5	
Methylhexylcarbyl iodide	"	1.310, 16°	Bouis. J. 8, 526.
" " "	"	1.330, 0°	De Clermont. J. 21, 449.
" " "	"	1.314, 21°	
Normal nonyl iodide	$C_9 H_{19} I$	1.3052, 0°	Krafft. Ber. 19, 2218.
" " "	"	1.2874, 16°	
Normal decyl iodide	$C_{10} H_{21} I$	1.2768, 0°	" "
" " "	"	1.2599, 16°	

2d. Miscellaneous Compounds.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methylene iodide	$C H_2 I_2$	3.342, 5°	Butlerow. J. 11, 420.
" "	"	3.3188, 19°	Gladstone. Bei. 9, 249.
" "	"	3.326, 15°.5	
" "	"	3.328, 15°	
" "	"	3.2343, 16°	
" "	"	3.289, 33°	Brauns. Bei. 11, 698.
" "	"	3.189, 74°	
" "	"	3.28528, 15°	Perkin. J. P. C. (2), 31, 481.
" "	"	3.26555, 25°	
Ethylene iodide	$C_2 H_4 I_2$	2.07	E. Kopp. J. P. C. 33, 183.
Ethylidene iodide	"	2.84, 0°	Gustavson. B. S. C. 22, 13.
Propylene iodide	$C_3 H_6 I_2$	2.490, 18°.5	Berthelot and De Luca. J. 7, 453.
" "	"	2.5631, 19°	Freund. J. C. S. 42, 156.
Trimethylene iodide	"	2.59617, 4°	Perkin. Ber. 18, 221.
" "	"	2.57612, 15°	
" "	"	2.56144, 25°	
Allylene dihydriodate	"	2.15, 0°	Oppenheim. J. 18, 493.
" "	"	2.4458, 0°	Semenoff. J. 18, 494.
β Butylene iodide	$C_4 H_8 I_2$	2.291, 0°	Wurtz. C. R. 97, 473.
Diallyl dihydriodate	$C_6 H_{12} I_2$	2.024, 0°	Wurtz. J. 17, 511.
Iodoform	$C H I_3$	2.00	Weltzien's Zusammenstellung.
"	"	4.09	Brügelmann. Ber. 17, 2359.
Acetylene iodide	$C_2 H_2 I_2$	3.303, 21°, s. }	Sabanejeff. A. C. P. 178, 119-121.
" "	"	2.942, 21°, l. }	
Iodethylene (vinyl iodide)	$C_2 H_3 I$	1.98	Regnault.
"	"	2.09, 0°	Gustavson. Ber. 7, 731.
Allyl iodide	$C_3 H_5 I$	1.789, 16°	Berthelot and De Luca.
" "	"	1.746, 0°	Woieikoff. J. 16, 495.
" "	"	1.848, 12°	Linnemann. A. C. P., 3d Supp., 267.
" "	"	1.839, 14°	Linnemann. A. C. P., 3d Supp., 264.
" "	"	1.8696, 0°	Zander. A. C. P. 214, 181.
" "	"	1.6601, 102°.6	
" "	"	1.846, 15°	Romburgh. Ber. 16, 392.
" "	"	1.82403, 15°	Perkin. J. P. C. (2), 31, 481.
" "	"	1.80776, 25°	
Allylene hydriodate	"	1.8346, 0°	Semenoff. J. 18, 494.
" "	"	1.8028, 16°	
Allylene iodide	$C_3 H_4 I_2$	2.62, 0°	Oppenheim. J. 18, 493.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Iodallylene -----	$C_3 H_3 I$ -----	1.7 -----	Liebermann. J. 18, 495.
Propargyl iodide -----	" -----	2.0177, 0° -----	Henry. Ber. 17, 1132.
Diallyl hydriodate -----	$C_6 H_{11} I$ -----	1.497, 0° -----	Wurtz. J. 17, 514.
Iodhexylene -----	" -----	1.92, 10° -----	Destrem. Ann. (5), 27, 50.
Iodobenzene -----	$C_6 H_5 I$ -----	1.69 -----	Schutzenberger. J. 14, 348.
" -----	" -----	1.833 -----	Kekulé. J. 19, 554.
" -----	" -----	1.64, 15° -----	Ladenburg. A. C. P. 159, 251.
" -----	" -----	1.8403, 11° -----	} Schiff. Ber. 19, 560.
" -----	" -----	1.7732, 56°.8 -----	
" -----	" -----	1.7374, 79°.2 -----	
" -----	" -----	1.6486, 135°.5 -----	
" -----	" -----	1.8578, 0° -----	} Schiff. Bei. 9, 559.
" -----	" -----	1.5612, 187°.5 -----	
Orthiodtoluene -----	$C_7 H_7 I$ -----	1.698, 20° -----	Beilstein and Kuhlberg. A.C.P. 158, 349.
Metaiodtoluene -----	" -----	1.697, 20° -----	Beilstein and Kuhlberg. Z. C. 13, 103.
Benzyl iodide -----	" -----	1.7335, 25° -----	Lieben. J. 22, 425.

LIX. COMPOUNDS CONTAINING C, H, I, O, OR C, H, I, N.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Tetraiodmethyl oxide -----	$C_2 H_2 I_4 O$ -----	3.345 -----	Brüning. J. 10, 432.
Moniodethyl oxide -----	$C_4 H_9 I O$ -----	1.6924, 0° -----	Henry. C. R. 100, 1007.
Acetyl iodide -----	$C_2 H_3 O. I$ -----	1.98, 17° -----	Guthrie. J. 10, 344.
Propyl iodacetate -----	$C_5 H_9 I O_2$ -----	1.6794, 7° -----	Henry. C. R. 100, 114.
Methyl β iodpropionate -----	$C_4 H_7 I O_2$ -----	1.8408, 7° -----	" "
Ethyl β iodpropionate -----	$C_5 H_9 I O_2$ -----	1.707, 8° -----	" "
" " -----	" -----	1.6789, 15° -----	Otto. Ber. 21, 98.
Methyl γ iodbutyrate -----	" -----	1.666, 5° -----	Henry. C. R. 102, 368.
Iodaldehyde -----	$C_2 H_3 I O$ -----	2.14, 20° -----	Chautard. C. R. 102, 118.
Iodacetone -----	$C_3 H_5 I O$ -----	2.17, 15° -----	Clermont and Chautard. C.R. 100, 745.
Iodhydrodiglycide -----	$C_6 H_{11} I O_3$ -----	1.783 -----	Berthelot and De Luca.
Diiodhydrin -----	$C_3 H_6 I_2 O$ -----	2.4 -----	Nahmacher. Ber. 5, 356.
Epiiodhydrin -----	$C_3 H_5 I O$ -----	2.03, 13° -----	Reboul. J. 13, 459.
Santonyl iodide -----	" -----	1.3282 -----	Carnelutti and Nasini. Ber. 13, 2210.
Iodchinolin -----	$C_9 H_6 I N$ -----	1.9323 -----	} La Coste. Ber. 18, 780.
" -----	" -----	1.9345 -----	

LX. COMPOUNDS CONTAINING TWO OR MORE HALOGENS.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Chlorobrommethane -----	$C H_2 Cl Br$ -----	1.9907, 19° ---	Henry. C. R. 101, 599.
Bromochloroform -----	$C H Cl_2 Br$ -----	1.9254, 15° ---	Jacobsen and Neumeister. Ber. 15, 599.
“ -----	“ -----	1.983 -----	Arnhold. A. C. P. 240, 192.
Chlorobromoform -----	$C H Cl Br_2$ -----	2.4450, 15° ---	Jacobsen and Neumeister. Ber. 15, 599.
“ -----	“ -----	2.447, 20° ----	Dyson. J. C. S. 43, 36.
Ethylene chlorobromide--	$C H_2 Cl. C H_2 Br$ ---	1.700, 18° ----	Henry. A. C. P. 156, 15.
“ “ --	“ --	1.705, 11° ----	Montgolfier and Giraud. C. R. 88, 654.
Ethylidene chlorobromide	$C H_3. C H Cl Br$ ---	1.61, 14° ----	Reboul. A. C. P. 155, 215.
“ “ --	“ --	1.666, 16° ----	Denzel. Ber. 11, 1739.
Chlorodibromethane -----	$C H_3. C Br_2 Cl$ -----	2.134, 16° ----	“ “
“ -----	$C H_2 Br. C H Br Cl$ -----	2.268, 16° ----	“ “
Dichlorbromethane -----	$C H_3. C Br Cl_2$ -----	1.752, 16° ----	Denzel. Ber. 11, 1740.
“ -----	$C H_2 Cl. C H Br Cl$ -----	2.113, 0° ----	Lescoeur. J. C. S. 34, 718.
“ -----	“ --	1.86850, 15° } -----	Perkin. J. P. C. (2), 32, 523.
“ -----	“ --	1.85420, 25° } -----	
“ -----	$C H Cl_2. C H_2 Br$ ---	1.238, 15°. ? --	Delacre. Bull. Acad. Belg. (3), 13, 251.
Brommethylchloroform --	$C Cl_3. C H_2 Br$ -----	1.8839, 0° ----	Henry. C. R. 98, 371.
Chlortribromethane-----	$C H_2 Br. C Br_2 Cl$ --	2.602, 16° ----	Denzel. Ber. 11, 1739.
Dichlordibromethane ----	$C H_2 Br. C Br Cl_2$ --	2.270, 16° ----	Denzel. Ber. 11, 1740.
“ -----	$C H Cl_2. C H Br_2$ ---	2.391, 19° ----	Sabanejeff. Ber. 16, 1221.
Trichlordibromethane----	$C_2 H Cl_3 Br_2$ -----	2.317, 0° ----	Paterno. J. P. C. (2), 5, 98.
“ -----	“ -----	2.295, 19°.5 } -----	
“ -----	“ -----	2.129, 100° } -----	
Chlortetrabromethane----	$C H Br_2. C Br_2 Cl$ --	3.366, 16° ----	Denzel. Ber. 11, 1740.
Chlordibromethylene ----	$C_2 H Br_2 Cl$ -----	2.275, 16° ----	Denzel. Ber. 11, 1741.
Dichlorbromethylene ----	$C_2 H Cl_2 Br$ -----	1.906, 16° ----	“ “
Acetylene chlorobromide-	$C_2 H_2 Cl Br$ -----	1.8157, 0° ----	Plimpton. J. C. S. 41, 391.
“ “ --	“ -----	1.7787, 0° -- } -----	Sabanejeff. Ber. 16, 1221.
“ “ --	“ -----	1.7467, 19° } -----	
Propylene chlorobromide-	$C_3 H_6 Cl Br$ -----	1.62, 16° ----	Reboul. A. C. P. 155, 216.
“ “ --	$C H_3. CHCl. CH_2 Br$ -----	1.585, 0° ----	Friedeland Silva. B. S. C. (2), 17, 532.
“ “ --	“ --	1.475, 18° -- } -----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Propylene chlorobromide	$\text{CH}_3 \cdot \text{CH}_2 \cdot \text{CHClBr}$	1.60, 20°	Reboul. Ber. 7, 1037.
"	$\text{CH}_3 \cdot \text{CHBr} \cdot \text{CH}_2\text{Cl}$	1.474, 21°	"
"	$\text{CH}_2\text{Br} \cdot \text{CH}_2 \cdot \text{CH}_2\text{Cl}$	1.63, 8°	"
Dibromchlorpropylene	$\text{CH}_3 \cdot \text{CClBr} \cdot \text{CH}_2\text{Br}$	2.064, 0°	Friedel. J. 12, 337.
Chlorodibromhydrin	$\text{C}_3\text{H}_5\text{ClBr}_2$	2.085, 9°	Reboul. J. 13, 461.
"	"	2.088	Oppenheim. J. 21, 341.
"	"	2.004, 15°	Darnstaedter. J. 22, 375.
Chlorobromhydroglycide	$\text{C}_3\text{H}_4\text{ClBr}$	1.69, 14°	Reboul. J. 13, 461.
Derivative of chlorobromhydroglycide.	$\text{C}_3\text{H}_4\text{ClBr}_3$	2.39, 14°	Reboul. J. 13, 462.
Derivative of epidichlorhydrin.	$\text{C}_3\text{H}_4\text{Cl}_2\text{Br}_2$	2.10, 13°	"
Bromallyl chloride	$\text{C}_3\text{H}_4\text{BrCl}$	1.63, 11°	Henry. B. S. C. 18, 232.
Chloracetyl bromide	$\text{C}_2\text{H}_2\text{ClO} \cdot \text{Br}$	1.913, 9°	Wilde. J. 17, 320.
Bromacetyl chloride	$\text{C}_2\text{H}_2\text{BrO} \cdot \text{Cl}$	1.908, 9°	Wilde. J. 17, 319.
Trichloracetyl bromide	$\text{C}_2\text{Cl}_3\text{O} \cdot \text{Br}$	1.900, 15°	Hofferichter. J. P. C. (2), 20, 195.
Hexchlortetrabromethyl oxide.	$\text{C}_4\text{Cl}_6\text{Br}_4\text{O}$	2.5, 18°	Malaguti. Ann. (3), 16, 25.
Chlorobromethyl acetate	$\text{C}_4\text{H}_6\text{ClBrO}_2$	1.6499, 11°.4	Henry. C. R. 97, 1308.
Dichlordibromethyl acetate.	$\text{C}_6\text{H}_6\text{Cl}_2\text{Br}_2\text{O}_3$	1.956, 19°	Conrad and Guthzeit. Ber. 16, 1551.
Tribromchloracetone	$\text{C}_3\text{H}_2\text{ClBr}_3\text{O}$	2.270	Cloëz. Ann. (6), 9, 145.
Bromochloral	$\text{C}_2\text{HCl}_2\text{BrO}$	1.9176, 15°	Jacobsen and Neumeister. Ber. 15, 599.
Chlorobromal	$\text{C}_2\text{HBr}_2\text{ClO}$	2.2793, 15°	"
Chlorobromhydrin	$\text{C}_3\text{H}_6\text{ClBrO}$	1.740, 12°	Reboul. J. 13, 458.
"	"	1.7641, 9°	Henry. Z. C. 13, 604.
Phycite bromodichlorhydrin.	$\text{C}_3\text{H}_5\text{Cl}_2\text{BrO}$	2.1719, 0°	Wolff. A. C. P. 150, 32.
"	"	2.1426, 17°.5	
Chlorodibromnitromethane.	$\text{C Cl Br}_2\text{N O}_2$	2.421, 15°	Tscherniak. Ber. 8, 610.
Chlorobromnitrin	$\text{C}_3\text{H}_5\text{ClBrN O}_3$	1.7904, 9°	Henry. Ber. 4, 701.
Chloriodomethane	$\text{C H}_2\text{Cl I}$	2.49, 20°	Sakurai. J. C. S. 41, 362.
"	"	2.447, 11°	Sakurai. J. C. S. 47, 198.
"	"	2.444, 14°.5	
Chloriodoform	$\text{C H Cl}_2\text{I}$	1.96	Bouchardat. A. C. P. 22, 230.
"	"	2.454, 0°	Borodine. J. 15, 391.
"	"	2.403, 21°.5	
Ethylene chloriodide	$\text{C}_2\text{H}_4\text{Cl I}$	2.151, 0°	Simpson. J. 16, 485.
"	"	2.39, 20°	Maumené. J. 22, 345.
"	"	2.16439, 0°	Thorpe. J. C. S. 37, 371.
"	"	1.87915, 140°.1	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Chloriodethylene -----	$C_2 H_2 Cl I$ -----	2.1431, 0° -----	Henry. C. R. 98, 742.
Acetylene chloriodide -----	" -----	2.2298 -----	Plimpton. J. C. S. 41, 391.
" " -----	" -----	2.154, 0° -----	Sabanejeff. Ber. 16, 1221.
" " -----	" -----	2.1175, 19° -----	
Propylene chloriodide -----	$C_3 H_6 Cl I$ -----	1.932, 0° -----	Simpson. J. 16, 494.
" " -----	" -----	1.824 -----	Oppenheim. J. 20, 571.
β Chlorallyl iodide -----	$C_3 H_4 Cl I$ -----	1.977, 15° -----	Romburgh. Ber. 16, 393.
α Chlorallyl iodide -----	" -----	1.880 -----	
" " -----	" -----	1.913 -----	
Dichloriodhydrin -----	$C_3 H_5 Cl_2 I$ -----	2.0476, 9° -----	Henry. Ber. 4, 701.
Orthochloriodobenzene -----	$C_6 H_4 Cl I$ -----	1.928, 24°.5 -----	Beilstein and Kurbatow. A. C. P. 176, 43.
Chloriodotoluene -----	$C_7 H_6 Cl I$ -----	1.702, 19° -----	Beilstein and Kuhlberg. A. C. P. 156, 82.
" -----	" -----	1.716, 17° -----	Wroblevsky. Z. C. 13, 164.
" -----	" -----	1.770, 19°.5 -----	" "
Chloriodethyl acetate -----	$C_4 H_6 Cl I O_2$ -----	1.9540, 18° -----	Henry. C. R. 97, 1308.
Iodochlorhydrin -----	$C_3 H_6 Cl I O_2$ -----	2.06, 10° -----	Reboul. J. 13, 458.
Bromiodomethane -----	$C H_2 Br I$ -----	2.9262, 16°.8 -----	Henry. C. R. 101, 599.
Ethylene bromiodide -----	$C H_2 Br. C H_2 I$ -----	2.7, 1° -----	Reboul. A. C. P. 155, 214.
" " -----	" -----	2.516, 29° -----	Simpson. C. N. 29, 53.
" " -----	" -----	2.514, 30° -----	Friedel. C. R. 79, 164.
" " -----	" -----	2.705, 18°, s. -----	Lagermarck. Ber. 7, 907.
Ethylidene bromiodide -----	$C H_3. C H Br I$ -----	2.5, 1° -----	Reboul. A. C. P. 155, 213.
" " -----	" -----	2.452, 16° -----	Lagermarck. Ber. 7, 907.
Dibromiodethane -----	$C_2 H_3 Br_2 I$ -----	2.86, 29° -----	Simpson. C. N. 29, 53.
Bromiodethylene -----	$C_2 H_2 Br I$ -----	2.5651, 0° -----	Henry. C. R. 98, 742.
Acetylene bromiodide -----	" -----	2.750, 0°, s. -----	Plimpton. J. C. S. 41, 391.
" " -----	" -----	2.6272, 17°.5 -----	
Propylene bromiodide -----	$C_3 H_6 Br I$ -----	2.2, 11° -----	Reboul. A. C. P. 155, 214.
Paraiodorthobromtoluene -----	$C_7 H_6 Br I$ -----	2.044, 20°.7 -----	Wroblevsky. Z. C. 13, 165.
Metaiodorthobromtoluene -----	" -----	2.139, 18° -----	Wroblevsky. Z. C. 14, 210.
Chlorobromiodethane -----	$C_2 H_3 Cl Br I$ -----	2.53, 0° -----	Henry. C. R. 98, 680.
Chlorobromiodhydrin -----	$C_3 H_5 Cl Br I$ -----	2.325, 9° -----	Henry. Ber. 4, 701.

LXI. ORGANIC COMPOUNDS OF FLUORINE.*

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Fluobenzene -----	$C_6 H_5 F$ -----	1.024, 20° -----	Wallach. A. C. P. 235, 255.
“ -----	“ -----	1.0236, 20° -----	Wallach and Heusler. A. C. P. 243, 221.
Paradifluobenzene -----	$C_6 H_4 F_2$ -----	1.11 -----	Wallach and Heusler. A. C. P. 243, 219.
Parafluotoluene -----	$C_7 H_7 F$ -----	.992, 25° -----	Wallach. A. C. P. 235, 255.
Parafluochlorobenzene -----	$C_6 H_4 Cl F$ -----	1.226, 15° -----	Wallach and Heusler. A. C. P. 243, 219.
Parafluobrombenzene -----	$C_6 H_4 Br F$ -----	1.593, 15° -----	“ “
Parafluoanilin -----	$C_6 H_5 N F$ -----	1.153, 25° -----	Wallach. A. C. P. 235, 255.
Parafluonitrobenzene -----	$C_6 H_4 N O_2 F$ -----	1.326, 1. -----	“ “

LXII. ORGANIC COMPOUNDS OF SULPHUR.

1st. Compounds Containing C, H, and S.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl sulphide -----	$(C H_3)_2 S$ -----	.845, 21° -----	Regnault. Ann. (2), 71, 391.
Ethyl sulphide -----	$(C_2 H_5)_2 S$ -----	.825, 20° -----	Regnault. Ann. (2), 71, 388.
“ “ -----	“ -----	.83672, 0° -----	Pierre. C. R. 27, 213.
“ “ -----	“ -----	.83676, 20 -----	Nasini. Ber. 15, 2882.
Propyl sulphide -----	$(C_3 H_7)_2 S$ -----	.814, 17° -----	Cahours. B. S. C. 19, 301.
Ethyl amyl sulphide -----	$(C_2 H_5) (C_5 H_{11}) S$ -----	.852, 0° -----	Saytzeff. J. 19, 529.
Butyl sulphide -----	$(C_4 H_9)_2 S$ -----	.849, 0° -----	Saytzeff. J. 19, 528.
“ “ -----	“ -----	.8386, 16° -----	Grabowsky and Saytzeff. A. C. P. 175, 351.
“ “ -----	“ -----	.8317, 23° -----	Reymann. J. C. S. (2), 13, 141.
Isobutyl sulphide -----	“ -----	.8863, 10° -----	Beckman. J. P. C. (2), 17, 446.
Isoamyl sulphide -----	$(C_5 H_{11})_2 S$ -----	.84314, 20° -----	Nasini. Ber. 15, 2883.
Octyl sulphide -----	$(C_8 H_{17})_2 S$ -----	.8419, 17° -----	Möslinger. Ber. 9, 1004.

* See also under organic compounds of boron.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl disulphide-----	$C_2 H_6 S_2$ -----	1.046, 18° ----	Cahours. Ann. (3), 18, 258.
“ “ -----	“ -----	1.06358, 0° ----	Pierre. C. R. 27, 213.
Ethyl disulphide -----	$C_4 H_{10} S_2$ -----	About 1.00 ----	Morin. P. A. 48, 484.
“ “ -----	“ -----	.99267, 20° ----	Nasini. Ber. 15, 2882.
Amyl disulphide -----	$C_{10} H_{22} S_2$ -----	.918, 18° ----	O. Henry. J. 1, 700.
Methyl trisulphide -----	$C_3 H_9 S_3$ -----	1.2162, 0° --	Klason. Ber. 20, 3415.
“ “ -----	“ -----	1.2059, 10° --	
“ “ -----	“ -----	1.199, 17° --	
Ethyl mercaptan -----	$C_2 H_5. S H$ -----	.842, 15° ----	Zeise. P. A. 31, 389.
“ “ -----	“ -----	.835, 21° ----	Liebig. A. C. P. 11, 15.
“ “ -----	“ -----	.8456, 5°—10° --	} Regnault. P. A. 53, 60.
“ “ -----	“ -----	.8406, 10°—15° --	
“ “ -----	“ -----	.8356, 15°—20° --	
“ “ -----	“ -----	.83907, 20° ----	
Butyl mercaptan -----	$C_4 H_9. S H$ -----	.858, 0° ----	{ Grabowsky and Saytzeff. A. C. P. 175, 351.
“ “ -----	“ -----	.843, 16° ----	
Isobutyl mercaptan -----	“ -----	.848, 11°.5 ----	Humann. J. 8, 613.
“ “ -----	“ -----	.8299, 17° ----	Reymann. J. C. S. (2), 13, 141.
“ “ -----	“ -----	.83573, 20° ----	Nasini. Ber. 15, 2882.
Amyl mercaptan -----	$C_5 H_{11}. S H$ -----	.835, 21° ----	Krutzsch. J. P. C. 31, 2.
“ “ -----	“ -----	.8548, 0° ----	} Kopp. A. C. P. 95, 307.
“ “ -----	“ -----	.8405, 16°.9 ----	
“ “ -----	“ -----	.83475, 20° ----	
Hexyl mercaptan -----	$C_6 H_{13}. S H$ -----	.8856, 0° ----	Nasini. Ber. 15, 2883.
			Wanklyn and Erlenmeyer. J. 17, 509.
Carbon tetramercaptide --	$C (S C_2 H_5)_4$ -----	1.01 -----	Claesson. J. 1877, 520.
Ethylene mercaptan -----	$C_2 H_4 (S H)_2$ -----	1.123, 23°.5 ----	Werner. J. 15, 424.
Methylene dithioethylate.	$C H_2. (S C_2 H_5)_2$ -----	.987, 20° ----	Claesson. J. P. C. 123, 176.
Ethylene dithioethylate--	$C_2 H_4. (S C_2 H_5)_2$ -----	.98705, 15°.5 --	V. Meyer. Ber. 19, 3266.
Ethylene thiovinylethy-	$C_2 H_4. S C_2 H_5. S C_2 H_5$ -----	1.01921, 15°.5 --	} “ “
late. “ -----	“ -----	1.0167, 19°—20° --	
Derivative of dithioglycol	$C_5 H_{10} S_2$ -----	1.037, 22° ----	Mansfeld. Ber. 19, 2662.
Amylene sulphide -----	$C_5 H_{10} S$ -----	.907, 13° ----	Guthrie. J. 14, 665.
Vinyl sulphide -----	$(C_2 H_3)_2 S$ -----	1.015, 13° ----	Semmler. A. C. P. 241, 93.
Allyl sulphide -----	$(C_3 H_5)_2 S$ -----	.8544, 11° ----	Gladstone. Bei. 9, 249.
“ “ -----	“ -----	.88765, 4° ----	Nasini and Scala. Bei. 10, 696.
Allyl trisulphide -----	$C_6 H_{10} S_3$ -----	1.012, 15° ----	Löwig. J. 13, 399.
Fusyl sulphide -----	$C_5 H_9 S$ -----	.880, 13° ----	Guthrie. J. 12, 484.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Trisulphhydrin-----	$C_3 H_8 S_3$ -----	1.391, 14°.4----	Carius. J. 15, 455.
Methyl trisulphocarbonate	$C_3 H_6 S_3$ -----	1.159, 18° ----	Cahours. Ann. (3), 19, 162.
Ethyl trisulphocarbonate	$C_5 H_{10} S_3$ -----	1.152 ----	Salomon. J. P. C. (2), 6, 433.
Amyl trisulphocarbonate	$C_{11} H_{22} S_3$ -----	.877 ----	Hüsemann. J. 15, 410.
Ethylene trisulphocarbonate.	$C_3 H_4 S_3$ -----	1.4768 ----	Hüsemann. A. C. P. 123, 87
Propylene trisulphocarbonate.	$C_4 H_6 S_3$ -----	1.31, 20° ----	Hüsemann. J. 15, 434.
Butylene trisulphocarbonate.	$C_5 H_8 S_3$ -----	1.26, 20° ----	" "
Amylene trisulphocarbonate.	$C_6 H_{10} S_3$ -----	1.073 ----	" "
Allyl trisulphocarbonate	$C_7 H_{10} S_3$ -----	.943 ----	Hüsemann. J. 15, 410.
Phenyl sulphide-----	$(C_6 H_5)_2 S$ -----	1.119 ----	Stenhouse. J. 18, 532.
Phenyl tetrasulphide ----	$(C_6 H_5)_2 S_4$ -----	1.297, 14°.5----	Otto. J. P. C. (2), 37, 209.
Phenyl ethyl sulphide ---	$(C_6 H_5) (C_2 H_5) S$ ---	1.0315, 10° ---	Beckmann. J. C. S. 36, 37.
Ethyl paratolyl sulphide -	$(C_7 H_7) (C_2 H_5) S$ ---	1.0016, 17°.5--	Gäbler. Ber. 13, 1277.
Phenyl mercaptan-----	$C_6 H_5. S H$ -----	1.078, 14° ----	Vogt. J. 14, 630.
Benzyl mercaptan-----	$C_7 H_7. S H$ -----	1.058, 20° ----	Märcker. J. 18, 543.
Xylyl mercaptan-----	$C_8 H_9. S H$ -----	1.036, 13° ----	Schepper. J. 18, 558.
Mesitylene mercaptan----	$C_9 H_{11}. S H$ -----	1.0192 ----	Holtmeyer. J. 20, 708.
Cymyl mercaptan-----	$C_{10} H_{13}. S H$ -----	.9975, 17°.5----	Flesch. C. C. 4, 519.
" "-----	"-----	.989 ----	Fittica. A. C. P. 172, 326.
" "-----	"-----	.995 ----	Bechler. Leipzig Inaug. Diss. 1873.
Methylecymyl mercaptan -	$C_{11} H_{15}. S H$ -----	.986 ----	" "
Naphtyl mercaptan-----	$C_{10} H_7. S H$ -----	1.146, 23° ----	Schertel. J. 17, 533.
Thiophene-----	$C_4 H_4 S$ -----	1.062, 23° ----	V. Meyer. Ber. 16, 1471.
"-----	"-----	1.08844, 0°	} Schiff. Ber. 18, 1605.
"-----	"-----	1.0769, 10°	
"-----	"-----	1.0651, 20°	
"-----	"-----	1.0533, 30°	
"-----	"-----	1.0413, 40°	
"-----	"-----	1.0291, 50°	
"-----	"-----	1.0169, 60°	
"-----	"-----	1.0045, 70°	
"-----	"-----	.9920, 80°	
"-----	"-----	.98741, 84°	
"-----	"-----	1.05928, 4° ----	Nasini and Scala. Bei. 10, 696.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Thiophene -----	$C_4 H_4 S$ -----	1.07387, 11°.8	} Knops. V. H. V. 1887, 17.
“ -----	“ -----	1.06835, 16°.5	
“ -----	“ -----	1.06466, 19°.7	
“ -----	“ -----	1.06432, 20°	
“ -----	“ -----	1.06045, 23°.4	
“ -----	“ -----	1.05662, 26°.6	
“ -----	“ -----	1.05332, 29°.2	
Thiotolene -----	$C_5 H_6 S$ -----	1.0194, 18°	Meyer and Kreis. Ber. 17, 788.
Orthothioxene -----	$C_6 H_8 S$ -----	.9777, 21°	Demuth. Ber. 19, 1858.
“ -----	“ -----	.9938, 21°	Grünwald. Ber. 20, 2586.
Metathioxene -----	“ -----	.9755, 17°.5	Messinger. Ber. 18, 1637.
“ -----	“ -----	.9956, 20°	Zelinsky. Ber. 20, 2017.
Ethylthiophene -----	“ -----	.990, 24°	Meyer and Kreis. Ber. 17, 1558.
Normal propylthiophene -----	$C_7 H_{10} S$ -----	.974, 16°	“ “
Isopropylthiophene -----	“ -----	.9695, 16°	Schleicher. Ber. 19, 673.
Normal butylthiophene -----	$C_8 H_{12} S$ -----	.957, 19°	Meyer and Kreis. Ber. 17, 1558.
Diethylthiophene -----	“ -----	.962, 14°	Muhlert. Ber. 19, 634.
Octylthiophene -----	$C_{12} H_{20} S$ -----	.8118, 20°.5	Schweinitz. Ber. 19, 644.
β Methylpenththiophene -----	$C_6 H_8 S$ -----	.9938, 19°	Krekeler. Ber. 19, 3271.

2d. Compounds Containing C, H, S, and O.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl sulphite -----	$(C H_3)_2 S O_3$ -----	1.0456, 16°.2	Carius. J. 12, 86.
Methyl ethyl sulphite -----	$(C H_3) (C_2 H_5) S O_3$ -----	1.0675, 18°	Carius. A. C. P. 111, 103.
Ethyl sulphite -----	$(C_2 H_5)_2 S O_3$ -----	1.085, 16°	Ebelmen and Bou- quet. Ann. (3), 17, 67.
“ “ -----	“ -----	1.10634, 0°	Pierre. C. R. 27, 213.
“ “ -----	“ -----	1.1063, 0°	} Carius. J. P. C. (2), 2, 285.
“ “ -----	“ -----	1.0926, 12°.7	
“ “ -----	“ -----	1.0982, 11°	Nasini. Bei. 9, 324.
Methyl sulphate -----	$(C H_3)_2 S O_4$ -----	1.324, 22°	Dumas and Peligot. Ann. (2), 58, 33.
“ “ -----	“ -----	1.385, 13°	Bödeker. B. D. Z.
“ “ -----	“ -----	1.327, 18°	Claesson. J. P. C. (2), 19, 244.
“ “ -----	“ -----	1.33344, 15°	} Perkin. J. C. S. 49, 777.
“ “ -----	“ -----	1.32757, 20°	
“ “ -----	“ -----	1.32386, 25°	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethyl sulphate -----	$(C_2 H_5)_2 S O_4$ -----	1.120 -----	Wetherill. J. 1, 692.
" " -----	" -----	1.1837, 19° -----	Claesson. J. P. C. (2), 19, 258.
" " -----	" -----	1.167 -----	Stempnevsky. Ber. 15, 947.
Ethyl sulphurous acid ---	$C_2 H_5. H. S O_3$ -----	1.3 -----	Kopp. A. C. P. 35, 343.
Ethyl sulphuric acid -----	$C_2 H_5. H. S O_4$ -----	1.319 -----	Vogel. Gmelin's Handbuch.
" " " -----	" -----	1.315 } 16° {	Marchand. Gmelin's Handbuch.
" " " -----	" -----	1.317 }	Duflos. Gmelin's Handbuch.
" " " -----	" -----	1.215 -----	
Ethyl ethylsulphonate ---	$C_4 H_{10} S O_3$ -----	1.1712, 0° ---	Carius. J. P. C. (2), 2, 269.
" " -----	" -----	1.1508, 20°.4 }	Nasini. Ber. 15, 2884.
" " -----	" -----	1.14517, 22° ---	
Isoamyl ethyl sulphone ---	$C_7 H_{16} S O_2$ -----	1.0315, 18° ---	Beckmann. J. C. S. 36, 38.
Diisobutyl sulphone -----	$C_8 H_{18} S O_2$ -----	1.0056, 18° ---	" "
Methyl methylxanthate ---	$C H_3 O. C S. C H_3 S$ ---	1.143, 15° ---	Cahours. Ann. (3), 19, 160.
" " -----	" -----	1.176, 18° -----	Salomon. J. P. C. (2), 8, 114.
Ethyl methylxanthate ---	$C H_3 O. C S. C_2 H_5 S$ ---	1.12, 18° -----	" "
" " -----	" -----	1.123, 11° -----	Chancel. J. 3, 470.
Methyl ethylxanthate -----	$C_2 H_5 O. C S. C H_3 S$ ---	1.129, 18° -----	Salomon. J. P. C. (2), 8, 114.
" " -----	" -----	1.11892, 4° ---	Nasini and Scala. Bei. 10, 696.
Ethyl ethylxanthate -----	$C_2 H_5 O. C S. C_2 H_5 S$ ---	1.0703, 18° ---	Zeise. A. C. P. 55, 310.
" " -----	" -----	1.07 -----	Debus. A. C. P. 75, 125.
" " -----	" -----	1.085, 19° -----	Salomon. J. P. C. (2), 6, 433.
Methyl propylxanthate ---	$C_3 H_7 O. C S. C H_3 S$ ---	1.08409, 4° ---	Nasini and Scala. Bei. 10, 696.
Ethyl propylxanthate -----	$C_3 H_7 O. C S. C_2 H_5 S$ ---	1.05054, 4° ---	" "
Ethyl butylxanthate -----	$C_4 H_9 O. C S. C_2 H_5 S$ ---	1.003, 17° -----	Mylius. B. S. C. 19, 221.
Butyl butylxanthate -----	$C_4 H_9 O. C S. C_4 H_9 S$ ---	1.009, 12° -----	" "
Ethyl dithiocarbonate ---	$C_2 H_5 S. C O. C_2 H_5 S$ ---	1.084, 20° -----	Schmidt and Glutz. J. 21, 575.
" " -----	" -----	1.085, 19° -----	Salomon. J. P. C. (2), 6, 433.
Ethyl thiocarbonate ---	$C_2 H_5 O. C O. C_2 H_5 S$ ---	1.0285, 18° ---	" "
Ethyl dioxythiocarbonate	$C_2 H_5 O. C S. C_2 H_5 O$ ---	1.032, 1° -----	Debus. J. 3, 465.
" " -----	" -----	1.031, 19° -----	Salomon. J. P. C. (2), 6, 433.
Ethyl butylthiocarbonate	$C_2 H_5 S. C O. C_4 H_9 O$ ---	.9939, 10° -----	Mylius. Ber. 6, 312.
" " " -----	$C_2 H_5 O. C O. C_4 H_9 S$ ---	.9938, 10° -----	" "
Ethyl dioxysulphocarbonate. ?	$C_6 H_{10} S_4 O_2$ -----	1.26043, 4° -----	Nasini and Scala. Bei. 10, 696.
Propyl dioxysulphocarbonate. ?	$C_8 H_{14} S_4 O_2$ -----	1.19661, 4° -----	" "

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Xanthurin -----	$C_4 H_8 S O_2$ -----	1.012 -----	Couërbe. A. C. P. 40, 297.
Thiacetic acid -----	$C_2 H_4 S O$ -----	1.074, 10° -----	Ulrich. J. 12, 355.
Ethyl ethylthioglycollate -----	$C_6 H_{12} S O_2$ -----	1.0469, 4° -----	Claesson. B. S. C. 23, 445.
Ethyl amylthioglycollate -----	$C_9 H_{18} S O_2$ -----	.9797, 4° -----	Claesson. B. S. C. 23, 446.
Ethyl phenylthioglycollate. " -----	$C_{10} H_{12} S O_2$ -----	1.136, 4° -----	} Claesson. B. S. C. 23, 443.
" " -----	" " -----	1.1269, 15° -----	
Disulphamylen oxide -----	$C_{10} H_{20} S_2 O$ -----	1.054, 13° -----	Guthrie. J. 12, 483.
Disulphamylen hydrate -----	$C_{10} H_{22} S_2 O_2$ -----	1.049, 8° -----	" "
Aldehyde with sulphaldehyde.* -----	$C_2 H_4 O + C_2 H_4 S$ -----	1.134 -----	Weidenbusch. J. 1, 550.
Diheptylene sulphoxide -----	$(C_7 H_{14})_2 S O$ -----	.875, 23° -----	Schiff. J. 21, 724.
Monosulphhydrin -----	$C_3 H_8 S O_2$ -----	1.295, 14°.4 -----	Carius. J. 15, 453.
Disulphhydrin -----	$C_3 H_8 S_2 O$ -----	1.342, 14°.4 -----	Carius. J. 15, 454.
Ethyl thioxalate -----	$C_6 H_{10} S O_3$ -----	1.1446, 0° -----	Morley and Saint. J. C. S. 43, 400.
Oxysulphobenzid -----	$C_{12} H_{10} S O_4$ -----	1.3663, 15° -----	Annaheim. Ber. 9, 1149.
Oxyphenyl mercaptan -----	$C_6 H_6 S O$ -----	1.2373, 0° -----	} Haitinger. M. C. 4, 171.
" " -----	" " -----	1.1889, 100° -----	
Thiophene aldehyde -----	$C_5 H_4 S O$ -----	1.215, 21° -----	Biedermann. Ber. 19, 1853.
Acetothienone -----	$C_6 H_6 S O$ -----	1.167, 24° -----	Peter. Ber. 17, 2644.
Acetoethylthienone -----	$C_8 H_{10} S O$ -----	1.0959, 20° -----	Schleicher. Ber. 19, 660.
Acetylthioxene -----	" -----	1.0910, 17° -----	Messinger. Ber. 18, 2302.

3d. Sulphur Compounds Containing Nitrogen.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl thiocyanate -----	$N C. S C H_3$ -----	1.115, 16° -----	Cahours. Ann. (3), 18, 261.
" " -----	" -----	1.08794, 0° -----	Pierre. C. R. 27, 213.
" " -----	" -----	1.06935, 4° -----	Nasini and Scala. Bei. 10, 696.
Ethyl thiocyanate -----	$N C. S C_2 H_5$ -----	1.020, 16° -----	Cahours. Ann. (3), 18, 265.
" " -----	" -----	a1.00 -----	Löwig. P. A. 67, 101.
" " -----	" -----	1.033, 0° -----	} Buff. Ber. 1, 206.
" " -----	" -----	1.01261, 19° -----	
" " -----	" -----	1.00238, 22° -----	
" " -----	" -----	.870135 -----	
" " -----	" -----	.869367 -----	
" " -----	" -----	1.00715, 4° -----	Nasini and Scala. Bei. 10, 696.

*Pinner's formula. Weidenbusch calls it "sulphhydrate of acetyl mercaptan," and writes the formula $C_{12} H_{26} S_7$.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Isopropyl thiocyanate	$\text{N C. S C}_3 \text{H}_7$	.989, 0°	Gerlich. Ber. 8, 651.
"	"	.974, 15°	
"	"	.963, 20°	
Amyl thiocyanate	$\text{N C. S C}_5 \text{H}_{11}$	.905, 20°	O. Henry. J. 1, 700.
Hexyl thiocyanate	$\text{N C. S C}_6 \text{H}_{13}$	.922, 12°	Pelouze and Cahours. J. 16, 526.
Allyl thiocyanate	$\text{N C. S C}_3 \text{H}_5$	1.071, 0°	Gerlich. Ber. 8, 653.
"	"	1.056, 15°	
Methyl thiocarbimide	C S. N C H_3	1.06912, 4°	Nasini and Scala. Bei. 10, 696.
Ethyl thiocarbimide	$\text{C S. N C}_2 \text{H}_5$	1.01925, 0°	Buff. Ber. 1, 206.
"	"	.997525, 21°.4	
"	"	.997235, 22°	
"	"	.87909	
"	"	.873513	
"	"	1.0030, 18°	
"	"	.99525, 4°	Gladstone. Bei. 9, 249.
Tertiary butyl thiocarbimide.	$\text{C S. N C}_4 \text{H}_9$	.9187, 15°	Rudneff. Ber. 12, 1023.
"	"	.9003, 34°	
Amyl thiocarbimide	$\text{C S. N C}_5 \text{H}_{11}$	.957538, 0°	Buff. Ber. 1, 206.
"	"	.94189, 17°	
"	"	.78749, 182°	
Hexyl thiocarbimide	$\text{C S. N C}_6 \text{H}_{13}$	.9253	Uppenkamp. Ber. 8, 56.
Allyl thiocarbimide	$\text{C S. N C}_3 \text{H}_5$	1.015, 20°	Dumas and Pelouze. Ann. (2), 53, 182.
"	"	1.009	Will. A. C. P. 52, 4.
"	"	1.010	
"	"	1.0282, 0°	Kopp. A. C. P. 98, 367.
"	"	1.0173, 10°.1	
"	"	.8739	Schiff. Ber. 14, 2767.
"	"	.8741	
"	"	.8740, 151°.3	Schiff. Ber. 19, 560.
"	"	1.00572, 4°	Nasini and Scala. Bei. 10, 696.
Phenyl thiocarbimide	$\text{C S. N C}_6 \text{H}_5$	1.135, 15°.5	Hofmann. J. 11, 349.
"	"	1.155, 17°.5	Billeter. C. C. (3), 6, 101.
"	"	.9398, 219°.8	Schiff. Bei. 9, 559.
"	"	1.12891, 4°	Nasini and Scala. Bei. 10, 696.
"	"	1.35	Madan. C. N. 56, 257.
Sulpho-urea	$\text{C H}_4 \text{N}_2 \text{S}$	1.406, 4°	Schröder. Ber. 12, 561.
"	"	1.450	Schröder. Ber. 13, 1070.
Thialdin	$\text{C}_6 \text{H}_{13} \text{N S}_2$	1.191, 18°	Wöhler and Liebig. A. C. P. 61, 4.
Oenanthothialdin	$\text{C}_{21} \text{H}_{43} \text{N S}_2$	.896, 24°	Schiff. J. 21, 724.
Diamylene dithiocyanate	$\text{C}_{10} \text{H}_{20} (\text{C N})_2 \text{S}_2$	1.07, 13°	Guthrie. J. 14, 665.
Diamylene tetrathiocyanate.	$\text{C}_{10} \text{H}_{20} (\text{C N})_2 \text{S}_4$	1.16, 13°	" "

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sulphocarbanilide -----	$C_{13} H_{12} N_2 S$ -----	1.311 } 4° -- {	Schröder. Ber. 12,
" -----	" -----	1.330 } ----- {	1611.
Thiocyanacetone -----	$C_4 H_5 S N O$ -----	1.209, 0° -----	Tcherniak and Hel-
" -----	" -----	1.195, 20° -----	lon. Ber. 16, 350.
Acetyl thiocyanate -----	$N C. S C_2 H_3 O$ -----	1.151, 16° -----	Miquel. C. R. 81,
Benzoyl thiocyanate -----	$N C. S C_7 H_5 O$ -----	1.197, 16° -----	1209.
Ethyl thiocyanacetate -----	$C_5 H_7 N S O_2$ -----	1.174 -----	Miquel. C. R. 81,
" " -----	" -----	1.174 -----	1210.
Cystic oxide -----	$C_3 H_7 N S O_2$ -----	1.7143 -----	Heintz. J. 18, 347,
			Claesson. Ber. 10,
			1349.
			Venables. Watts'
			Dict.

4th. Sulphur Compounds Containing Halogens.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Tetrachlor-methyl mer-	$C S Cl_4$ -----	1.712, $12^\circ.8$ -----	Rathke. A. C. P.
captan.			167, 198.
" " " "	" -----	1.722, 0° -----	Klason. Ber. 20,
" " " "	" -----	1.7049, 11° -----	
" " " "	" -----	1.6953, $17^\circ.5$ -----	
Dichlorethyl sulphide -----	$(C_2 H_3 Cl_2)_2 S$ -----	1.547, 12° -----	Riche. J. 7, 556.
Tetrachlorethyl sulphide -----	$(C_2 H Cl_4)_2 S$ -----	1.673, 24° -----	Regnault. Ann. (2),
			71, 406.
Ethyl chlorperthiocarbon-	$C_2 H_5 S_2 Cl_2$ -----	1.1408, 16° -----	Klason. Ber. 20,
ate.			2385.
Ethylene thiodichloride --	$C_2 H_4 S Cl_2$ -----	1.408, 13° -----	Guthrie. J. 12, 482.
Ethylene dithiodichloride	$(C_2 H_4)_2 S_2 Cl_2$ -----	1.346, 19° -----	Guthrie. J. 13, 435.
Chlorethylene dithiodi-	$(C_2 H_3 Cl)_2 S_2 Cl_2$ -----	1.599, 11° -----	Guthrie. J. 13, 433.
chloride.			
Dichlorethylene thiodi-	$(C_2 H_2 Cl_2)_2 S Cl_2$ -----	1.225 } $13^\circ.5$ -----	Guthrie. J. 13, 434.
chloride.	" -----	1.219 } -----	
Amylene thiodichloride --	$C_5 H_{10} S Cl_2$ -----	1.138, 14° -----	Guthrie. J. 12, 481.
Amylene dithiodichloride	$(C_5 H_{10})_2 S_2 Cl_2$ -----	1.149, 12° -----	Guthrie. J. 12, 480.
Trichloramylene thiodi-	$(C_5 H_7 Cl_3)_2 S Cl_2$ -----	1.406, 16° -----	Guthrie. J. C. S.
chloride.			13, 44.
Methylsulphonic chloride	$C H_3 Cl S O_2$ -----	1.51 -----	McGowan. J. P. C.
			(2), 30, 280.
Dichlormethylsulphonic	$C H Cl_3 S O_2$ -----	1.71 -----	McGowan. Leipzig
chloride.			In. Diss. 1884.
Ethylsulphonic chloride --	$C_2 H_5 Cl S O_2$ -----	1.357, $22^\circ.5$ -----	Gerhardt and Chan-
			cel. J. 5, 435.
Phenylsulphonic chloride	$C_6 H_5 Cl S O_2$ -----	1.378, 23° -----	Gerhardt and Chan-
			cel. J. 5, 434.
Trichlormethyl amyl sul-	$C Cl_3. C_5 H_{11}. S O_3$ -----	1.104 -----	Carius. A. C. P.
phite.			113, 36.
Ethyl chlorosulphonate --	$C_2 H_5 O. S O_2. Cl$ -----	1.379, 0° -----	Purgold. J. 21, 416.
" " " "	" -----	1.3556, 27° -----	
" " " "	" -----	1.324, 61° -----	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethyl chlorosulphonate	$C_2 H_5 O. S O_2. Cl$	1.3866, 0°	} Two preparations. Claesson. J. P. C. (2), 21, 377.
" "	"	1.3539, 27°	
" "	"	1.3874, 0°	
" "	"	1.3541, 27°	
Carbonyl thioethyl chloride.	$C_2 H_5 S. C O. Cl$	1.184, 16°	Salomon. J. P. C. (2), 7, 254.
Carbonyl thioamyl chloride.	$C_5 H_{11} S. C O. Cl$	1.078, 17°.5	Schöne. J. P. C. (2), 32, 241.
Chlorallyl thiocarbimide	$C S. N C_3 H_4 Cl$	1.27, 12°	L. Henry. Ber. 5, 186.
Ethylene chlorothiocyanate.	$C_2 H_4. Cl. S C N$	1.28, 15°	James. J. C. S. 43, 38.
Tetrachloroxysulphobenzid.	$C_{12} H_6 Cl_4 S O_4$	1.7774, 16°	Annaheim. Ber. 9, 1150.
Tetrabromoxysulphobenzid.	$C_{12} H_6 Br_4 S O_4$	2.3775, 17°	" "
Tetriodoxysulphobenzid.	$C_{12} H_6 I_4 S O_4$	2.7966, 19°	" "
Monobromthiophene	$C_4 H_3 Br S$	1.652, 23°	V. Meyer. Ber. 16, 1470.
Dibromthiophene	$C_4 H_2 Br_2 S$	2.147, 23°	" "
Octyliodthiophene	$C_4 H_2 S. C_8 H_{17}. I$	1.2614, 20°	Schweinitz. Ber. 19, 644.

LXIII. ORGANIC COMPOUNDS OF BORON.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Boron triethyl	$B (C_2 H_5)_3$	.6961, 23°	Frankland and Duppa. J. 13, 386.
Trimethyl borate	$(C H_3)_3 B O_3$	.9551, 0°	Ebelmen and Bouquet. J. P. C. 38, 218.
" "	"	.940, 0°	} Schiff. A. C. P., 5th Supp., 184.
" "	"	.915, 20°	
Triethyl borate	$(C_2 H_5)_3 B O_3$	.8849	Ebelmen and Bouquet. J. P. C. 38, 215.
" "	"	.871	Bowman. P. M. (3), 29, 548.
" "	"	.887, 0°	} Schiff. A. C. P., 5th Supp., 161.
" "	"	.861, 26°.5	
Methyl diethyl borate	$C H_3 (C_2 H_5)_2 B O_3$	.904, 0°	} Schiff. A. C. P., 5th Supp., 197.
" " "	"	.883, 20°	
Tripropyl borate	$(C_3 H_7)_3 B O_3$	.867, 16°	Cahours. C. C. 4, 482.
Triamyl borate	$(C_5 H_{11})_3 B O_3$	.870	Ebelmen and Bouquet. J. P. C., 38, 219.
" "	"	.872, 0°	} Schiff. A. C. P., 5th Supp., 189 and 195.
" "	"	.852, 24°	
" "	"	.840	
" "	"	.855	
" "	"	.853, 29, another lot.	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethyl diamyl borate -----	$C_2 H_5 (C_5 H_{11})_2 B O_3$ -----	.876, 0° -----	Schiff. A. C. P., 5th Supp., 193.
“ “ “ -----	“ “ “ -----	.852, 28° -----	
Diethyl amyl borate -----	$(C_2 H_5)_2 C_5 H_{11} B O_3$ -----	.858, 26° -----	“ “
Amyl metaborate -----	$C_5 H_{11} B O_2$ -----	.971, 0° -----	Schiff. A. C. P., 5th Supp., 189.
“ “ -----	“ “ -----	.949, 20° -----	
Tetraphenyl borate -----	$(C_6 H_5)_4 B_2 O_5$ -----	1.13 -----	Schiff and Bechi. J. 19, 493.
“ “ -----	“ -----	1.124, 0° -----	Schiff. A. C. P., 5th Supp., 208.
“ “ -----	“ -----	1.106, 20° -----	
Ethylene fluoborate -----	$C_2 H_5 B F O_2$ -----	1.0478, 23° -----	Landolph. Ber. 12, 1586.

LXIV. ORGANIC COMPOUNDS OF PHOSPHORUS.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Triethylphosphin -----	$P (C_2 H_5)_3$ -----	.812, 15°.5-----	Hofmann and Ca- hours. J. 10, 372.
Monooctylphosphin -----	$P H_2 (C_8 H_{17})$ -----	.8209, 17° -----	Möslinger. Ber. 9, 1007.
Phenylphosphin -----	$P H_2 (C_6 H_5)$ -----	1.001, 15° -----	Köhler and Michael- is. Ber. 10, 809.
Diphenylphosphin -----	$P H (C_6 H_5)_2$ -----	1.07, 16° -----	Dörken. Ber. 21, 1508.
Triphenylphosphin -----	$P (C_6 H_5)_3$ -----	1.194 -----	Michaelis and So- den. A. C. P. 229, 302.
“ -----	“ -----	1.186 -----	Soden. Tübingen In. Diss. 1885.
Dimethylphenylphosphin	$P (C H_3)_2 C_6 H_5$ -----	.9768, 11° -----	Michaelis. Ber. 8, 498.
Diphenylmethylphosphin	$P C H_3 (C_6 H_5)_2$ -----	1.0784, 15° -----	Michaelis and Link. A. C. P. 207, 209.
Diethylphenylphosphin --	$P (C_2 H_5)_2 C_6 H_5$ -----	.9571, 13° -----	Michaelis. Ber. 8, 494.
Ethyl phosphite -----	$(C_2 H_5)_3 P O_3$ -----	1.075 -----	Williamson. J. 7, 563.
Methyl hypophosphate---	$(C H_3)_4 P_2 O_6$ -----	1.109, 15° -----	Sänger. A. C. P. 232, 1.
Ethyl hypophosphate ----	$(C_2 H_5)_4 P_2 O_6$ -----	1.1170, 15° -----	“ “
Propyl hypophosphate ---	$(C_3 H_7)_4 P_2 O_6$ -----	1.134, 15° -----	“ “
Isobutyl hypophosphate--	$(C_4 H_9)_4 P_2 O_6$ -----	1.125, 15° -----	“ “
Methyl orthophosphate --	$(C H_3)_3 P O_4$ -----	1.2378, 0° -----	Weger. A. C. P. 221, 61.
“ “ -----	“ -----	1.0019, 197°.2-----	
Dimethyl ethyl orthophos- phate. “ “ -----	$(C H_3)_2 C_2 H_5 P O_4$ -----	1.1752, 0° -----	“ “
“ “ -----	“ -----	.95188, 203°.3-----	
Ethyl orthophosphate ----	$(C_2 H_5)_3 P O_4$ -----	1.072, 12° -----	Limpricht. J. 18, 471.
Ethyl pyrophosphate ----	$(C_2 H_5)_4 P_2 O_7$ -----	1.172, 17° -----	Clermont. J. 7, 562.
Amyl amylphosphite ----	$(C_5 H_{11})_2 H P O_3$ -----	.967, 19°.5-----	Wurtz. A. C. P. 58, 77.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Diamylphosphoric acid----	$(C_5 H_{11})_2 H P O_4$ ----	1.025, 20° ----	Fehling.
Triphenyl phosphite-----	$(C_6 H_5)_3 P O_3$ -----	1.184, 18° ----	Noack. A. C. P. 218, 99.
Phosphenyl ether -----	$C_6 H_5 P O_2 (C_2 H_5)_2$ ----	1.032, 16° ----	Köhler and Michaelis. Ber. 10, 817.
Phenylphosphinic acid --	$C_6 H_5. H_2 P O_3$ ----	1.475, 4° ----	Schröder. Ber. 12, 561.
Diphenylphosphinic acid--	$(C_6 H_5)_2 H P O_2$ ----	1.331 } 4° ----	" "
" " " " " "	" " " " " "	1.347 }	" "
Phenoxyldiphenylphosphin.	$C_6 H_5 O (C_6 H_5)_2 P$ ----	1.140, 24° ----	Michaelis and La Coste. Ber. 18, 2111.
Triphenylphosphin oxide--	$(C_6 H_5)_3 P O$ -----	1.2124, 22°.6--	Michaelis and La Coste. Ber. 18, 2120.
Naphtylphosphinic acid--	$C_{10} H_7. H_2 P O_3$ -----	1.435 } 4° -- {	Schröder. Ber. 12, 561.
" " " " " "	" " " " " "	1.445 }	" "
Naphtylphosphorous acid	$C_{10} H_7. H_2 P O_2$ -----	1.377, 4° ----	" "
" " " " " "	" " " " " "	1.441, 4°, after fusion.	" "
Complex ether? -----	$C_{14} H_{36} P_2 O_8$ -----	.960, 14° ----	Geuther. A. C. P. 224, 278.
Amylnitrophosphorous acid.	$(C_5 H_{11})_2 H P N O_4$ ----	1.02, 20° } 1.00, 70° } ----	Guthrie. J. 11, 404.
Ethylphosphorouschloride	$C_2 H_5 P O Cl_2$ -----	1.316, 0° ----	Menschutkin. A. C. P. 139, 344.
" " " " " "	" " " " " "	1.305265, 0° --	} Thorpe. J. C. S. 37, 372.
" " " " " "	" " " " " "	1.13989, 117°.5	
Butylphosphorous chloride.	$C_4 H_9 P O Cl_2$ -----	1.191, 0° ----	Menschutkin. J. 19, 487.
Amylphosphorous chloride.	$C_5 H_{11} P O Cl_2$ -----	1.109, 0° ----	" "
Diacetone phosphorochloride.	$C_6 H_{10} P O_2 Cl$ -----	1.209, 17°.5--	Michaelis. Ber. 18, 900.
Phenylphosphorous chloride.	$C_6 H_5 P O Cl_2$ -----	1.3549 ----	Hölzer. Quoted by Noack.
" " " " " "	" " " " " "	1.348, 18° ----	Noack. A. C. P. 218, 91.
" " " " " "	" " " " " "	1.3543, 20° ----	Anschütz and Emery. A. C. P. 239, 310.
Diphenylphosphorous chloride.	$(C_6 H_5)_2 P O_2 Cl$ ----	1.2494 ----	Hölzer. Quoted by Noack.
" " " " " "	" " " " " "	1.221, 18° ----	Noack. A. C. P. 218, 92.
Phosphenyl chloride----	$C_6 H_5 P Cl_2$ -----	1.319, 20° ----	Michaelis. C. C. 4, 548.
" " " " " "	" " " " " "	1.3428, 0° ----	} Thorpe. J. C. S. 37, 372.
" " " " " "	" " " " " "	1.10415, 224°.6	
Phosphenyl oxychloride--	$C_6 H_5 P Cl_2 O$ -----	1.375, 20° ----	Michaelis. C. C. 4, 548.
Diphenyl phosphochloride	$(C_6 H_5)_2 P Cl$ -----	1.2293, 15° ---	Michaelis and Link. A. C. P. 207, 209.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Metachlorocarbonylphenylorthophosphoric chloride.	$C_7 H_4 P O_3 Cl_3$ -----	1.54844, 20° --	Anschütz and Moore. A. C. P. 239, 335.
Parachlorocarbonylphenylorthophosphoric chloride.	“ -----	1.54219, 20° --	Anschütz and Moore. A. C. P. 239, 344.
By action of $P Cl_5$ on salicylic acid.	$C_7 H_4 P O_2 Cl_5$ -----	1.62019, 20° --	Anschütz and Moore. A. C. P. 239, 320.
Paraxylylphosphochloride.	$C_8 H_9 P Cl_2$ -----	1.25, 18° -----	Weller. Ber. 21, 1494.
Paraxylylphosphoroxychloride.	$C_8 H_9 P O Cl_2$ -----	1.31, 18° -----	“ “
Sulphophosphorous ether.	$(C_2 H_5)_3 P S_3$ -----	1.24, 12° -----	Michaelis. C. N. 25, 57.
Ethyl pyrosulphophosphate.	$(C_2 H_5)_4 P_2 S_3 O_4$ -----	1.1892, 17° ---	Michaelis. A. C. P. 164, 9.
Amyl sulphophosphate---	$(C_5 H_{11})_3 P S O_3$ ----	.849, 12° -----	Chevrier. J. 22, 344.
Ethylsulphophosphorous chloride.	$C_2 H_5 P S Cl_2$ -----	1.30, 12° -----	Michaelis. C. N. 25, 57.
Triethoxypyrophosphorsulphobromide.	$(C_2 H_5)_3 Br P_2 S_3 O_3$ ---	1.3567, 19° ---	Michaelis. A. C. P. 164, 9.
Phosphenyl sulphochloride.	$C_6 H_5 P Cl_2 S$ -----	1.376, 13° ----	Köhler and Michaelis. Ber. 9, 1053.
Triphenyltrisulphophosphamide.	$(C_6 H_5)_3 H_3 N_3 P S$ ---	1.34 -----	Chevrier. J. 21, 734.

LXV. ORGANIC COMPOUNDS OF VANADIUM, ARSENIC, ANTIMONY, AND BISMUTH.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethyl orthovanadate-----	$(C_2 H_5)_3 V O_4$ -----	1.167, 17°.5----	Hall. J. C. S. 51, 752.
Dimethylarsine oxide ----	$(As C_2 H_6)_2 O$ -----	1.462, 15° ----	Bunsen. P. A. 40, 224.
Triethylarsine-----	$As (C_2 H_5)_3$ -----	1.151, 16°.7---	Landolt. J. 6, 492.
Methyl arsenite -----	$(C H_3)_3 As O_3$ -----	1.428, 9°.6----	Crafts. Z. C. 14, 324.
Ethyl arsenite-----	$(C_2 H_5)_3 As O_3$ -----	1.224, 0° -----	Crafts. J. 20, 552.
Amyl arsenite-----	$(C_5 H_{11})_3 As O_3$ ----	1.0525, 0° -----	Crafts.
Methyl arsenate -----	$(C H_3)_3 As O_4$ -----	1.5591, 14°.5--	Crafts. Z. C. 14, 324.
Ethyl arsenate -----	$(C_2 H_5)_3 As O_4$ -----	1.3264, 0° -- }	Crafts. J. 20, 551.
“ “ -----	“ -----	1.3161, 8°.8 }	
Phenylarsenic acid -----	$C_6 H_7 As O_3$ -----	1.760 }	Schröder. Ber. 12, 561.
“ “ -----	“ -----	1.803 } 4°-- {	
“ “ -----	“ -----	1.805 }	
Diphenylarsenic acid ----	$C_{12} H_{11} As O_2$ -----	1.545, 4° -----	“ “

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Diphenylarsine chloride	$\text{As} (\text{C}_6 \text{H}_5)_2 \text{Cl}$	1.42231, 15°	La Coste and Michaelis. Ber. 11, 1885.
Phenylarsine bromide	$\text{As} (\text{C}_6 \text{H}_5) \text{Br}_2$	2.0983, 15°	Michaelis. Ber. 10, 626.
Ethyl thioarsenite	$\text{As} (\text{S} \text{C}_2 \text{H}_5)_3$	1.3141, 16°	Claesson. Lund Arskrift, 1884-'5.
Trimethylstibine	$\text{Sb} (\text{C} \text{H}_3)_3$	1.523, 15°	Landolt. J. 14, 569.
Triethylstibine	$\text{Sb} (\text{C}_2 \text{H}_5)_3$	1.3244, 16°	Löwig and Schweitzer. J. 3, 471.
Triamylstibine	$\text{Sb} (\text{C}_5 \text{H}_{11})_3$	1.1333, 17°	Berlé. J. 8, 586.
"	"	1.0587	Cramer. J. 8, 590.
Triethylstibine chloride	$\text{Sb} (\text{C}_2 \text{H}_5)_3 \text{Cl}_2$	1.540, 17°	Löwig and Schweitzer. J. 3, 476.
Triethylstibine bromide	$\text{Sb} (\text{C}_2 \text{H}_5)_3 \text{Br}_2$	1.953, 17°	" "
Triphenylstibine	$\text{Sb} (\text{C}_6 \text{H}_5)_3$	1.4998, 12°	Michaelis and Reese. A. C. P. 233, 46.
Metatritolylstibine	$\text{Sb} (\text{C}_7 \text{H}_7)_3$	1.3957, 15°.7	Michaelis and Genzken. A. C. P. 242, 185.
Paratritolylstibine	"	1.35448, 15°.6	Michaelis and Genzken. A. C. P. 242, 169.
Bismuth trimethyl	$\text{Bi} (\text{C} \text{H}_3)_3$	2.30, 18°	Marquandt. Ber. 20, 1517.
Bismuth triethyl	$\text{Bi} (\text{C}_2 \text{H}_5)_3$	1.82	Breed. J. 5, 602.
Bismuth triphenyl	$\text{Bi} (\text{C}_6 \text{H}_5)_3$	1.5851, 20°	Michaelis and Polis. Ber. 20, 55.

LXVI. ORGANIC COMPOUNDS OF SILICON.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Silicon tetrethyl	$\text{Si} (\text{C}_2 \text{H}_5)_4$	.7657, 22°.7	Friedel and Crafts. A. J. S. (2), 49, 311.
" "	"	.8341, 0°	Ladenburg. B. S. C. 18, 240.
Silicon hexethyl	$\text{Si}_2 (\text{C}_2 \text{H}_5)_6$	.8510, 0°	Friedel and Ladenburg. A. C. P. 203, 251.
" "	"	.8403, 20°	
Silicon tetrapropyl	$\text{Si} (\text{C}_3 \text{H}_7)_4$	.7979, 0°	Pape. Ber. 14, 1872.
" "	"	.7883, 15°	
Silicoheptane	$\text{Si} \text{C}_6 \text{H}_{16}$	.7510, 0°	Ladenburg. A. C. P. 164, 300.
Silicododecane	$\text{Si} \text{C}_9 \text{H}_{22}$	.7723, 0°	Pape. Ber. 14, 1872.
"	"	.7621, 15°	
Silicon triethyl phenyl	$\text{Si} (\text{C}_2 \text{H}_5)_3 \text{C}_6 \text{H}_5$	.9042, 0°	Ladenburg. C. C. 5, 312.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Silicon tetraphenyl -----	$\text{Si} (\text{C}_6 \text{H}_5)_4$ -----	1.078, 20° -----	Polis. Ber. 19, 1012.
Para-silicon tetratolyl -----	$\text{Si} (\text{C}_7 \text{H}_7)_4$ -----	1.0793, 20° -----	" "
Meta-silicon tetratolyl -----	" -----	1.1188, 20° -----	" "
Silicon tetrabenzyl -----	" -----	1.0776, 20° -----	" "
Ethyl metasilicate -----	$(\text{C}_2 \text{H}_5)_2 \text{SiO}_3$ -----	1.079, 24° -----	Ebelmen. A. C. P. 57, 339.
Methyl orthosilicate -----	$(\text{CH}_3)_4 \text{SiO}_4$ -----	1.0589, 0° -----	Friedel and Crafts. J. 18, 465.
Trimethyl ethyl orthosilicate.	$(\text{CH}_3)_3 \text{C}_2 \text{H}_5 \text{SiO}_4$ -----	1.023 -----	Friedel and Crafts. J. 19, 491.
Dimethyl diethyl orthosilicate.	$(\text{CH}_3)_2 (\text{C}_2 \text{H}_5)_2 \text{SiO}_4$ -----	1.004, 0° -----	" "
Methyl triethyl orthosilicate.	$\text{CH}_3 (\text{C}_2 \text{H}_5)_3 \text{SiO}_4$ -----	.989, 0° -----	" "
Ethyl orthosilicate -----	$(\text{C}_2 \text{H}_5)_4 \text{SiO}_4$ -----	.932 -----	Ebelmen. A. C. P. 52, 324.
" " -----	" -----	.933, 20° -----	Ebelmen. A. C. P. 57, 334.
" " -----	" -----	.9676, 0° -----	Friedel and Crafts. A. J. S. (2), 48, 158.
" " -----	" -----	.9330, 22°.5 -----	Mendelejeff. J. 13, 7.
Propyl orthosilicate -----	$(\text{C}_3 \text{H}_7)_4 \text{SiO}_4$ -----	.915, 18° -----	Cahours. C. C. 4, 482.
Butyl orthosilicate -----	$(\text{C}_4 \text{H}_9)_4 \text{SiO}_4$ -----	.953, 15° -----	Cahours. C. C. 5, 20.
Triethyl amyl orthosilicate	$(\text{C}_2 \text{H}_5)_3 \text{C}_5 \text{H}_{11} \text{SiO}_4$ -----	.926, 0° -----	Friedel and Crafts. A. J. S. (2), 43, 163.
Diethyl diamyl orthosilicate.	$(\text{C}_2 \text{H}_5)_2 (\text{C}_5 \text{H}_{11})_2 \text{SiO}_4$ -----	.915, 0° -----	Friedel and Crafts. J. 19, 489.
Ethyl triamyl orthosilicate	$\text{C}_2 \text{H}_5 (\text{C}_5 \text{H}_{11})_3 \text{SiO}_4$ -----	.913, 0° -----	" "
Amyl orthosilicate -----	$(\text{C}_5 \text{H}_{11})_4 \text{SiO}_4$ -----	.868, 20° -----	Ebelmen. A. C. P. 57, 344.
Hexmethyl disilicate -----	$(\text{CH}_3)_6 \text{Si}_2 \text{O}_7$ -----	1.1441, 0° -----	Friedel and Crafts. J. 18, 465.
Hexethyl disilicate -----	$(\text{C}_2 \text{H}_5)_6 \text{Si}_2 \text{O}_7$ -----	1.0196, 0° -----	Friedel and Crafts. J. 19, 489.
" " -----	" -----	1.0019, 19°.2 -----	
Octethyl tetrasilicate -----	$\text{C}_{16} \text{H}_{40} \text{Si}_4 \text{O}_{12}$ -----	1.071, 0° -----	{ Troost and Haute- feuille. B. S. C. 19, 255.
" " -----	" -----	1.054, 14°.5 -----	
Ethyl silicoacetate -----	$\text{C}_7 \text{H}_{18} \text{SiO}_3$ -----	.9283, 0° -----	Ladenburg. J. C. S. (2), 12, 40.
Methyl silicopropionate --	$\text{C}_5 \text{H}_{14} \text{SiO}_3$ -----	.9747, 0° -----	Ladenburg. A. C. P. 173, 143.
Ethyl silicopropionate ---	$\text{C}_8 \text{H}_{20} \text{SiO}_3$ -----	.9207, 0° -----	Friedel and Ladenburg. A. C. P. 159, 259.
Ethyl silicobenzoate -----	$\text{C}_{12} \text{H}_{20} \text{SiO}_3$ -----	1.0133, 0° -----	Ladenburg. J. C. S. (2), 11, 1026.
" " -----	" -----	1.0055, 10° -----	
Silicon diethyl diethylate.	$\text{C}_8 \text{H}_{20} \text{SiO}_2$ -----	.8752, 0° -----	Ladenburg. A. C. P. 164, 300.
Triethylsilicol -----	$\text{Si} \text{C}_6 \text{H}_{15} \text{OH}$ -----	.8709, 0° -----	" "
Silicoheptyl oxide -----	$(\text{Si} \text{C}_6 \text{H}_{15})_2 \text{O}$ -----	.8831, 0° -----	Ladenburg. Ber. 4, 730.
" " -----	" -----	.8590, 0° -----	Ladenburg. A. C. P. 164, 300.
Silicoheptyl acetate -----	$\text{Si} \text{C}_6 \text{H}_{15} \text{C}_2 \text{H}_3 \text{O}_2$ -----	.9039, 0° -----	" "
Silicoheptyl ethylate -----	$\text{Si} \text{C}_6 \text{H}_{15} \text{C}_2 \text{H}_5 \text{O}$ -----	.8403, 0° -----	" "

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Silicoheptyl chloride-----	$\text{Si C}_6 \text{H}_{15} \text{Cl}$ -----	.9249, 0°-----	Ladenburg. A. C. P. 164, 300.
Methylsilicic monochlorhydrin.	$\text{Si C}_3 \text{H}_9 \text{Cl O}_3$ -----	1.1954, 0°-----	Friedel and Crafts. J. 19, 490.
Methylsilicic dichlorhydrin.	$\text{Si C}_2 \text{H}_6 \text{Cl}_2 \text{O}_2$ -----	1.2595-----	" "
Ethylsilicic monochlorhydrin.	$\text{Si C}_6 \text{H}_{15} \text{Cl O}_3$ -----	1.0483, 0°-----	Friedel and Crafts. A. J. S. (2), 43, 160.
Ethylsilicicdichlorhydrin	$\text{Si C}_4 \text{H}_{10} \text{Cl}_2 \text{O}_2$ -----	1.144, 0°-----	Friedel and Crafts. J. 19, 488.
Ethylsilicic trichlorhydrin	$\text{Si C}_2 \text{H}_5 \text{Cl}_3 \text{O}$ -----	1.241, 0°-----	Friedel and Crafts. J. 19, 489.
Propylsilicic monochlorhydrin.	$\text{Si C}_9 \text{H}_{21} \text{Cl O}_3$ -----	.980-----	Cahours. C. C. 4, 482.
Propylsilicic dichlorhydrin.	$\text{Si C}_6 \text{H}_{14} \text{Cl}_2 \text{O}_2$ -----	1.028-----	" "
Derivative of silicon triethylphenyl.	$\text{Si C}_{12} \text{H}_{19} \text{Cl}$ -----	1.1085, 0°-----	Ladenburg. A. C. P. 173, 143.
Silicon iodoform-----	Si H I_3 -----	3.362, 0°-----	Friedel. A. C. P. 149, 96.
" "-----	"-----	3.314, 20°-----	

LXVII. ORGANIC COMPOUNDS OF TIN.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Stannetramethyl-----	$\text{Sn (C H}_3)_4$ -----	1.3138, 0°-----	Ladenburg. Z. C. 13, 605.
Stannodiethyl-----	$\text{Sn}_2 (\text{C}_2 \text{H}_5)_4$ -----	1.558, 15°-----	Löwig. J. 5, 584.
"-----	"-----	1.192-----	Buckton. J. 11, 392.
"Ethylene stannethyl"-----	"-----	1.410-----	Löwig. J. 5, 585.
Stanntriethyl-----	$\text{Sn}_2 (\text{C}_2 \text{H}_5)_6$ -----	1.4115, 0°-----	Ladenburg. Z. C. 13, 604.
Stanntetrethyl-----	$\text{Sn (C}_2 \text{H}_5)_4$ -----	1.187, 13°.6---	Frankland. J. 12, 411.
Stannethyltrimethyl-----	$\text{Sn C}_2 \text{H}_5 (\text{C H}_3)_3$ ---	1.243-----	Cahours. J. 14, 551.
Stannodiethyldimethyl-----	$\text{Sn (C}_2 \text{H}_5)_2 (\text{C H}_3)_2$ ---	1.2319, 19°---	Frankland. J. 12, 412.
"-----	"-----	1.2509, 0°---	Two lots. Morgu- noff. Z. C. 10, 370.
"-----	"-----	1.2603, 0°---	
Stanntetrapropyl-----	$\text{Sn (C}_3 \text{H}_7)_4$ -----	1.179, 14°-----	Cahours. B. S. C. 20, 190.
Stanntriethylphenyl-----	$\text{Sn (C}_2 \text{H}_5)_3 \text{C}_6 \text{H}_5$ ---	1.2639, 0°-----	Ladenburg. A. C. P. 159, 251.
Stanntriethyl ethylate---	$\text{Sn (C}_2 \text{H}_5)_3 \text{C}_2 \text{H}_5 \text{O}$ ---	1.2634, 0°-----	Ladenburg. A. C. P., 8th Supp., 60.
Stanndimethyl iodide-----	$\text{Sn (C H}_3)_2 \text{I}_2$ -----	2.872, 22°-----	Cahours. J. 12, 427.
Stanntrimethyl iodide-----	$\text{Sn (C H}_3)_3 \text{I}$ -----	2.155, 18°-----	Cahours. J. 12, 429.
" "-----	"-----	2.1432, 0°---	Ladenburg. Z. C. 13, 605.
" "-----	"-----	2.1096, 18°---	
Stannodiethyl iodide-----	$\text{Sn (C}_2 \text{H}_5)_2 \text{I}_2$ -----	1.8-----	Cahours. J. 12, 424.
" "-----	"-----	2.0329, 15°---	Frankland. J. 12, 413.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Stanntriethyl chloride ----	$\text{Sn} (\text{C}_2 \text{H}_5)_3 \text{Cl}$ ----	1.428, 8° ----	Cahours. J. 12, 425.
“ “ ----	“ ----	1.320 ----	Löwig. J. 5, 588.
Stanntriethyl bromide ----	$\text{Sn} (\text{C}_2 \text{H}_5)_3 \text{Br}$ ----	1.630 ----	“ “
Stanntriethyl iodide ----	$\text{Sn} (\text{C}_2 \text{H}_5)_3 \text{I}$ ----	1.850 ----	“ “
“ “ ----	“ ----	1.833, 22° ----	Cahours. J. 12, 424.
Stanntripropyl iodide ----	$\text{Sn} (\text{C}_3 \text{H}_7)_3 \text{I}$ ----	1.692, 16° ----	Cahours. B.S.C. 19, 301.
Stanntributyl iodide ----	$\text{Sn} (\text{C}_4 \text{H}_9)_3 \text{I}$ ----	1.540, 15° ----	Cahours. C. C. 5, 20.
“Ethstannethyl chloride”	$\text{Sn}_2 \text{C}_{10} \text{H}_{25} \text{Cl}$ ----	1.30 ----	Löwig. J. 5, 588.
“Ethstannethyl bromide”	$\text{Sn}_2 \text{C}_{10} \text{H}_{25} \text{Br}$ ----	1.48 ----	“ “
“Ethstannethyl iodide”--	$\text{Sn}_2 \text{C}_{10} \text{H}_{25} \text{I}$ ----	1.724 ----	“ “

LXVIII. ORGANIC COMPOUNDS OF ALUMINUM.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Aluminum ethylate ----	$\text{Al} (\text{C}_2 \text{H}_5 \text{O})_3$ ----	1.147, 4° ----	Gladstone and Tribe. C. N. 42, 3.
Aluminum propylate ----	$\text{Al} (\text{C}_3 \text{H}_7 \text{O})_3$ ----	1.026, 4° ----	“ “
Aluminum butylate ----	$\text{Al} (\text{C}_4 \text{H}_9 \text{O})_3$ ----	.9825, 4° ----	“ “
Aluminum amylate ----	$\text{Al} (\text{C}_5 \text{H}_{11} \text{O})_3$ ----	.9804, 4° ----	“ “
Aluminum phenylate ----	$\text{Al} (\text{C}_6 \text{H}_5 \text{O})_3$ ----	1.25, 4° ----	“ “
Aluminum cresylate ----	$\text{Al} (\text{C}_7 \text{H}_7 \text{O})_3$ ----	1.166, 4° ----	“ “
Aluminum thymolate ----	$\text{Al} (\text{C}_{10} \text{H}_{13} \text{O})_3$ ----	1.04, 4° ----	“ “
Aluminum chloride and benzene. “ “	$\text{Al Cl}_3 \cdot 3 \text{C}_6 \text{H}_6$ ----	1.14, 0° ----	Gustavson. Ber. 11, 2152.
“ “ “ “	“ ----	1.12, 20° ----	
Aluminum chloride and toluene. “ “	$\text{Al Cl}_3 \cdot 3 \text{C}_7 \text{H}_8$ ----	1.08, 0° ----	“ “
“ “ “ “	“ ----	1.06, 22° ----	
Aluminum chloride and cymene. “ “	$2 \text{Al Cl}_3 \cdot 3 \text{C}_{10} \text{H}_{14}$ ----	1.139, 0° ----	Gustavson. Ber. 12, 694.
“ “ “ “	“ ----	1.127, 18° ----	
Aluminum bromide and benzene. “ “	$\text{Al Br}_3 \cdot 3 \text{C}_6 \text{H}_6$ ----	1.49, 0° ----	Gustavson. Ber. 11, 1845.
“ “ “ “	“ ----	1.47, 20° ----	
Aluminum bromide and toluene. “ “	$\text{Al Br}_3 \cdot 3 \text{C}_7 \text{H}_8$ ----	1.37, 0° ----	Gustavson. Ber. 11, 1843.
“ “ “ “	“ ----	1.35, 20° ----	
Aluminum bromide and cymene. “ “	$2 \text{Al Br}_3 \cdot 3 \text{C}_{10} \text{H}_{14}$ ----	1.493, 0° ----	Gustavson. Ber. 12, 694.
“ “ “ “	“ ----	1.477, 16° ----	

LXIX. ORGANIC COMPOUNDS OF ZINC, MERCURY, THALLIUM, AND LEAD.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Zinc methyl -----	$\text{Zn (C H}_3)_2$ -----	1.386, 10°.5 -----	Frankland and Duppa. J. 16, 473.
Zinc ethyl -----	$\text{Zn (C}_2\text{ H}_5)_2$ -----	1.182, 18° -----	Frankland. J. 8, 577.
Zinc propyl -----	$\text{Zn (C}_3\text{ H}_7)_2$ -----	1.098, 15° -----	Gladstone and Tribe. J. S. C. (2), 11, 968.
Zinc amyl -----	$\text{Zn (C}_5\text{ H}_{11})_2$ -----	1.022, 0° -----	Frankland and Duppa. J. 16, 473.
Mercurmethyl -----	$\text{Hg (C H}_3)_2$ -----	3.069 -----	Buckton. J. 11, 388.
Mercurethyl -----	$\text{Hg (C}_2\text{ H}_5)_2$ -----	2.444 -----	Buckton. J. 11, 390.
Mercurpropyl -----	$\text{Hg (C}_3\text{ H}_7)_2$ -----	2.124, 16° -----	Cahours. B. S. C. 19, 301.
Mercurbutyl -----	$\text{Hg (C}_4\text{ H}_9)_2$ -----	1.7469, 0° -----	{ Chapman and Smith. J. C. S. 22, 164.
“ -----	“ -----	1.7192, 16° -----	
“ -----	“ -----	1.835, 15° -----	Cahours. C. C. 5, 20.
Mercuramyl -----	$\text{Hg (C}_5\text{ H}_{11})_2$ -----	1.6663, 0° -----	Frankland and Duppa.
Mercuroctyl -----	$\text{Hg (C}_8\text{ H}_{17})_2$ -----	1.342, 17° -----	Eichler. Ber. 12, 1880.
Mercurdiphenyl -----	$\text{Hg (C}_6\text{ H}_5)_2$ -----	2.290 -----	{ Schröder. Ber. 12, 561.
“ -----	“ -----	2.324 -----	
“ -----	“ -----	2.340 -----	
Mercurdinaphtyl -----	$\text{Hg (C}_{10}\text{ H}_7)_2$ -----	1.918 -----	{ “ “
“ -----	“ -----	1.926 -----	
“ -----	“ -----	1.944 -----	
Mercurmethyl chloride -----	$\text{Hg C H}_3\text{ Cl}$ -----	4.063, 4° -----	“ “
Mercurethyl chloride -----	$\text{Hg C}_2\text{ H}_5\text{ Cl}$ -----	3.461 -----	{ “ “
“ “ -----	“ -----	3.503 -----	
Mercury β hexyl mercaptide.	$\text{Hg (C}_6\text{ H}_{13}\text{ S)}_2$ -----	1.6502, 0° -----	Wanklyn and Erlenmeyer. J. 17, 510.
Thallium ethylate -----	$\text{Tl C}_2\text{ H}_5\text{ O}$ -----	3.480 -----	{ Lamy. Ann. (4), 3, 373.
“ “ -----	“ -----	3.685 -----	
Thallium amylate -----	$\text{Tl C}_5\text{ H}_{11}\text{ O}$ -----	2.465 -----	{ Lamy. J. 17, 466
“ “ -----	“ -----	2.518 -----	
Lead tetramethyl -----	$\text{Pb (C H}_3)_4$ -----	2.034, 0° -----	Butlerow. J. 16, 476.
Lead diethyl -----	$\text{Pb (C}_2\text{ H}_5)_2$ -----	1.55 -----	Buckton. J. 11, 391.
“ “ -----	“ -----	1.62 -----	Buckton. J. 12, 409.
Lead triethyl -----	$\text{Pb}_2\text{ (C}_2\text{ H}_5)_6$ -----	1.471, 10° -----	Klippel. J. 13, 381.
Lead tetraphenyl -----	$\text{Pb (C}_6\text{ H}_5)_4$ -----	1.5298, 20° -----	Polis. Ber. 20, 716.
Para lead tetratolyl -----	$\text{Pb (C}_7\text{ H}_7)_4$ -----	1.4329, 20° -----	“ “

LXX. METALLIC SALTS OF ORGANIC ACIDS.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Lithium formate -----	$\text{Li C H O}_2 \cdot \text{H}_2 \text{O}$ -----	1.435 -----	Schröder. Ber. 14, 21.
" " -----	" -----	1.479 -----	
Sodium formate -----	Na C H O_2 -----	1.907 -----	" "
" " -----	" -----	1.931 -----	
Potassium formate -----	K C H O_2 -----	1.896 -----	" "
" " -----	" -----	1.920 -----	
Ammonium formate -----	Am C H O_2 -----	1.264 -----	" "
" " -----	" -----	1.271 -----	
Zinc formate -----	$\text{Zn C}_2 \text{H}_2 \text{O}_4$ -----	2.368 -----	Schröder. Ber. 14, 23.
" " -----	$\text{Zn C}_2 \text{H}_2 \text{O}_4 \cdot 2 \text{H}_2 \text{O}$ -----	2.339 -----	Schröder. Ber. 8, 199.
" " -----	" -----	2.205 -----	Schröder. Ber. 14, 23.
" " -----	" -----	2.1575, 21°.3 -----	Breen. F. W. C.
Cadmium formate -----	$\text{Cd C}_2 \text{H}_2 \text{O}_4 \cdot 2 \text{H}_2 \text{O}$ -----	2.429, 20°.2 -----	" "
" " -----	" -----	2.427 -----	Schröder. Ber. 14, 22.
" " -----	" -----	2.477 -----	
Calcium formate -----	$\text{Ca C}_2 \text{H}_2 \text{O}_4$ -----	2.021 -----	Schröder. Ber. 8, 199.
" " -----	" -----	2.009 -----	Schröder. Ber. 14, 22.
" " -----	" -----	2.015 -----	
Strontium formate -----	$\text{Sr C}_2 \text{H}_2 \text{O}_4$ -----	2.667 -----	" "
" " -----	$\text{Sr C}_2 \text{H}_2 \text{O}_4 \cdot 2 \text{H}_2 \text{O}$ -----	2.252, cryst. -----	Schröder. Ber. 8, 199.
" " -----	" -----	2.266, pulv. -----	
" " -----	" -----	2.244, m. of 3 -----	Schröder. Ber. 14, 22.
Barium formate -----	$\text{Ba C}_2 \text{H}_2 \text{O}_4$ -----	3.193, cryst. -----	Schröder. Ber. 8, 199.
" " -----	" -----	3.219, pulv. -----	
" " -----	" -----	3.203 -----	Two lots. Schröder. Ber. 11, 2129.
" " -----	" -----	3.233 -----	
Lead formate -----	$\text{Pb C}_2 \text{H}_2 \text{O}_4$ -----	4.56, 11° -----	Bödeker and Giesecke. B. D. Z.
" " -----	" -----	4.507 -----	Schröder. Dm. 1873.
" " -----	" -----	4.555 -----	
" " -----	" -----	4.610, cryst. -----	Schröder. Ber. 8, 199.
" " -----	" -----	4.621, pulv. -----	
Manganese formate -----	$\text{Mn C}_2 \text{H}_2 \text{O}_4$ -----	2.205 -----	Schröder. Ber. 14, 23.
" " -----	$\text{Mn C}_2 \text{H}_2 \text{O}_4 \cdot 2 \text{H}_2 \text{O}$ -----	1.947 -----	" "
" " -----	" -----	1.954 -----	
" " -----	" -----	1.959 -----	
Nickel formate -----	$\text{Ni C}_2 \text{H}_2 \text{O}_4 \cdot 2 \text{H}_2 \text{O}$ -----	2.1547, 20°.2 -----	H. Stallo. F. W. C.
Cobalt formate -----	$\text{Co C}_2 \text{H}_2 \text{O}_4 \cdot 2 \text{H}_2 \text{O}$ -----	2.1080, 20°.2 -----	" "
" " -----	" -----	2.1286, 22° -----	
Copper formate -----	$\text{Cu C}_2 \text{H}_2 \text{O}_4 \cdot 4 \text{H}_2 \text{O}$ -----	1.815, 20° -----	Gehlen. Ann. 83, 213.
" " -----	" -----	1.811, pulv. -----	Schröder. Ber. 8, 199.
" " -----	" -----	1.795, cryst. -----	
" " -----	" -----	1.831 -----	Schröder. Ber. 14, 23.
Strontium copper formate -----	$\text{Sr}_2 \text{Cu (C H O}_2)_6$ -----	2.612 -----	Schröder. Ber. 14, 24.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Strontium copper formate	$\text{Sr}_2\text{Cu}(\text{CHO}_2)_6 \cdot 8\text{H}_2\text{O}$	2.132 -----	Schröder. Ber. 14, 24.
" " "	" "	2.133 -----	
Barium copper formate	$\text{Ba}_2\text{Cu}(\text{CHO}_2)_6 \cdot 4\text{H}_2\text{O}$	2.747 -----	" "
Didymium formate	$\text{Di}(\text{C H O}_2)_3$	3.427 -----	Cleve. U. N. A. 1885.
" " "	" "	3.433 -----	
Samarium formate	$\text{Sm}(\text{C H O}_2)_3$	3.730 -----	" "
" " "	" "	3.732 -----	
" " "	" "	3.737 -----	
Sodium acetate	$\text{Na C}_2\text{H}_3\text{O}_2$	1.421, 14° -----	Bodeker. B. D. Z.
" " "	" "	1.524 -----	Schröder. Ber. 14, 1608.
" " "	" "	1.529 -----	
" " "	" "	1.53 -----	Brügelmann. Ber. 17, 2359.
" " "	$\text{Na C}_2\text{H}_3\text{O}_2 \cdot 3\text{H}_2\text{O}$	1.420 -----	Buignet. J. 14, 15.
" " "	" "	1.40, 12° -----	Bödeker. B. D. Z.
" " "	" "	1.450 -----	Schröder. Ber. 14, 1608.
" " "	" "	1.456 -----	
Sodium triacetate	$\text{Na C}_6\text{H}_{11}\text{O}_6$	1.47 -----	Lescoeur. C. R. 78, 1046.
Potassium triacetate	$\text{K C}_6\text{H}_{11}\text{O}_6$	1.34 -----	" "
Silver acetate	$\text{Ag C}_2\text{H}_3\text{O}_2$	3.1281, 15° -----	Liebig and Redtenbacher. P. M. (3), 19, 227.
" " "	" "	3.222 -----	Schröder. Ber. 9, 1888.
" " "	" "	3.259 -----	
Magnesium acetate	$\text{Mg}(\text{C}_2\text{H}_3\text{O}_2)_2$	1.419 -----	Schröder. Ber. 14, 1610.
" " "	" "	1.422 -----	
" " "	$\text{Mg}(\text{C}_2\text{H}_3\text{O}_2)_2 \cdot 4\text{H}_2\text{O}$	1.453 -----	" "
" " "	" "	1.455 -----	
" " "	" "	1.4487 -----	Kubel. Ber. 19, ref. 283.
Zinc acetate	$\text{Zn}(\text{C}_2\text{H}_3\text{O}_2)_2$	1.810 -----	Schröder. Ber. 14, 1610.
" " "	" "	1.869 -----	
" " "	$\text{Zn}(\text{C}_2\text{H}_3\text{O}_2)_2 \cdot 2\text{H}_2\text{O}$	1.735 -----	" "
" " "	$\text{Zn}(\text{C}_2\text{H}_3\text{O}_2)_2 \cdot 3\text{H}_2\text{O}$	1.7175, 12° -----	Bödeker. B. D. Z.
Cadmium acetate	$\text{Cd}(\text{C}_2\text{H}_3\text{O}_2)_2$	2.329 -----	Schröder. Ber. 14, 1611.
" " "	" "	2.352 -----	
" " "	$\text{Cd}(\text{C}_2\text{H}_3\text{O}_2)_2 \cdot 2\text{H}_2\text{O}$	1.998 -----	" "
" " "	" "	2.021 -----	
Mercuric acetate	$\text{Hg}(\text{C}_2\text{H}_3\text{O}_2)_2$	3.2544, 22° -----	Hagemann. F.W.C.
" " "	" "	3.2861, 23° -----	
Strontium acetate	$\text{Sr}(\text{C}_2\text{H}_3\text{O}_2)_2$	2.099 -----	Schröder. Ber. 14, 1608.
" " "	$2\text{Sr}(\text{C}_2\text{H}_3\text{O}_2)_2 \cdot 3\text{H}_2\text{O}$	1.981 -----	" "
" " "	" "	2.018 -----	
Barium acetate	$\text{Ba}(\text{C}_2\text{H}_3\text{O}_2)_2$	2.440 -----	Schröder. Ber. 11, 2129.
" " "	" "	2.486 -----	
" " "	" "	2.316 -----	Two lots. Schröder. Ber. 12, 561.
" " "	" "	2.440 -----	
" " "	" "	2.480 -----	Schröder. Ber. 14, 1608.
" " "	$\text{Ba}(\text{C}_2\text{H}_3\text{O}_2)_2 \cdot \text{H}_2\text{O}$	2.19, 13° -----	Bödeker. B. D. Z.
" " "	$\text{Ba}(\text{C}_2\text{H}_3\text{O}_2)_2 \cdot 3\text{H}_2\text{O}$	2.014 -----	Schröder. Ber. 14, 1608.
" " "	" "	2.026 -----	
Lead acetate	$\text{Pb}(\text{C}_2\text{H}_3\text{O}_2)_2$	3.238 -----	Schröder. Ber. 14, 1609.
" " "	" "	3.264 -----	

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Lead acetate -----	$\text{Pb} (\text{C}_2 \text{H}_3 \text{O}_2)_2 \cdot 3 \text{H}_2 \text{O}$	2.496 -----	Buignet. J. 14, 15.
" " -----	"	2.559, 13° -----	Schröder. Dm. 1873.
" " -----	"	2.540 -----	Schröder. Ber. 14, 1609.
" " -----	"	2.560 -----	
" " -----	"	2.460 -----	W. C. Smith. Am. J. P. 53, 145.
Manganese acetate -----	$\text{Mn} (\text{C}_2 \text{H}_3 \text{O}_2)_2$	1.737 -----	Schröder. Ber. 14, 1610.
" " -----	"	1.753 -----	
" " -----	$\text{Mn} (\text{C}_2 \text{H}_3 \text{O}_2)_2 \cdot 4 \text{H}_2 \text{O}$	1.588 -----	" "
" " -----	"	1.590 -----	
Nickel acetate -----	$\text{Ni} (\text{C}_2 \text{H}_3 \text{O}_2)_2$	1.797 -----	" "
" " -----	"	1.799 -----	
" " -----	$\text{Ni} (\text{C}_2 \text{H}_3 \text{O}_2)_2 \cdot 4 \text{H}_2 \text{O}$	1.7346, 17°.2 -----	H. Stallo. F. W. C.
" " -----	"	1.7443, 15°.7 -----	
" " -----	"	1.734 -----	Schröder. Ber. 14, 1610.
" " -----	"	1.753 -----	
Cobalt acetate -----	$\text{Co} (\text{C}_2 \text{H}_3 \text{O}_2)_2 \cdot 4 \text{H}_2 \text{O}$	1.7031, 15°.7 -----	H. Stallo. F. W. C.
" " -----	"	1.7043, 18°.7 -----	
Copper acetate -----	$\text{Cu} (\text{C}_2 \text{H}_3 \text{O}_2)_2$	1.920 -----	Schröder. Ber. 14, 1609.
" " -----	"	1.939 -----	
" " -----	$\text{Cu} (\text{C}_2 \text{H}_3 \text{O}_2)_2 \cdot \text{H}_2 \text{O}$	1.914, 20° -----	Gehlen. Ann. (1), 83, 213.
" " -----	"	1.880, m. of 4 -----	Schröder. Dm. 1873.
" " -----	"	1.875 -----	
" " -----	"	1.885 -----	
" " -----	"	1.875 -----	
" " -----	"	1.890 -----	Schröder. Ber. 14, 1609.
Didymium acetate -----	$\text{Di} (\text{C}_2 \text{H}_3 \text{O}_2)_3$	2.125, 13°.5 -----	Cleve. U. N. A. 1885.
" " -----	"	2.190, 16°.5 -----	
" " -----	$\text{Di} (\text{C}_2 \text{H}_3 \text{O}_2)_3 \cdot \text{H}_2 \text{O}$	2.230 -----	" "
" " -----	"	2.244 -----	
" " -----	$\text{Di} (\text{C}_2 \text{H}_3 \text{O}_2)_3 \cdot 4 \text{H}_2 \text{O}$	1.881 -----	" "
" " -----	"	1.884 -----	
Samarium acetate -----	$\text{Sm} (\text{C}_2 \text{H}_3 \text{O}_2)_3$	2.208, 18°.3 -----	" "
" " -----	$\text{Sm} (\text{C}_2 \text{H}_3 \text{O}_2)_3 \cdot 4 \text{H}_2 \text{O}$	1.942, 14°.5 -----	" "
" " -----	"	1.938, 15°.5 -----	
Calcium copper acetate -----	$\text{CaCu} (\text{C}_2 \text{H}_3 \text{O}_2)_4 \cdot 8 \text{H}_2 \text{O}$	1.4206 -----	Schabus. J. 3, 393.
Lithium uranyl acetate -----	$\text{Li U O}_2 (\text{C}_2 \text{H}_3 \text{O}_2)_3 \cdot 3 \text{H}_2 \text{O}$	2.280, 15° -----	Wyrouboff. B. S. M. 8, 118.
Sodium uranyl acetate -----	$\text{Na U O}_2 (\text{C}_2 \text{H}_3 \text{O}_2)_3$	2.55, 12° -----	Bödeker and Giesecke. B. D. Z.
Sodium uranyl monochloracetate.	$\text{Na U O}_2 (\text{C}_2 \text{H}_2 \text{Cl O}_2)_3 \cdot 2 \text{H}_2 \text{O}$	2.748, 14° -----	Clarke. A. C. J. 2, 331.
Silver propionate -----	$\text{Ag C}_3 \text{H}_5 \text{O}_2$	2.714 -----	Schröder. Ber. 10, 1872.
Barium propionate -----	$\text{Ba} (\text{C}_3 \text{H}_5 \text{O}_2)_2$	2.067, 22°.3 -----	Stern. F. W. C.
" " -----	"	1.970 -----	Schröder. Ber. 11, 2129.
Didymium propionate -----	$\text{Di} (\text{C}_3 \text{H}_5 \text{O}_2)_3$	1.861, 12°.5 -----	Cleve. U. N. A. 1885.
" " -----	$\text{Di} (\text{C}_3 \text{H}_5 \text{O}_2)_3 \cdot 3 \text{H}_2 \text{O}$	1.741, 12°.5 -----	" "
" " -----	"	1.742, 13° -----	
Samarium propionate -----	$\text{Sm} (\text{C}_3 \text{H}_5 \text{O}_2)_3$	1.894, 14° -----	" "
" " -----	$\text{Sm} (\text{C}_3 \text{H}_5 \text{O}_2)_3 \cdot 3 \text{H}_2 \text{O}$	1.784 -----	" "
" " -----	"	1.786 -----	
" " -----	"	1.788 -----	" "

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Silver butyrate -----	$\text{Ag C}_4 \text{H}_7 \text{O}_2$ -----	2.353, 4° -----	Schröder. Ber. 10, 848.
Barium butyrate -----	$\text{Ba (C}_4 \text{H}_7 \text{O}_2)_2$ -----	1.768, 22° -----	Stern. F. W. C.
Barium isobutyrate -----	" -----	1.779 -----	Schröder. Ber. 11, 2130.
" " -----	" -----	1.800 -----	
Silver isovalerate. Ppt. -----	$\text{Ag C}_5 \text{H}_9 \text{O}_2$ -----	2.110 -----	Schröder. Ber. 10, 848.
" " Cryst. -----	" -----	2.118 -----	
Silver caproate -----	$\text{Ag C}_6 \text{H}_{11} \text{O}_2$ -----	2.029, ppt. -----	From two caproic acids, probably not identical. Schröder. Ber. 10, 1872.
" " -----	" -----	2.052, cryst. -----	
" " -----	" -----	2.053, " -----	
" " -----	" -----	1.866, " -----	
" " -----	" -----	1.877, " -----	
Silver caprylate -----	$\text{Ag C}_8 \text{H}_{15} \text{O}_2$ -----	1.740, ppt. -----	Schröder. Ber. 10, 1873.
" " -----	" -----	1.771, cryst. -----	
Potassium methylsulphate -----	$\text{K C H}_3 \text{S O}_4$ -----	2.057 -----	Schröder. Ber. 11, 2020.
Barium methylsulphate -----	$\text{Ba (C H}_3 \text{S O}_4)_2 \cdot 2 \text{H}_2 \text{O}$ -----	2.276, 20°.2 -----	Geppert. F. W. C.
" " -----	" -----	2.258 -----	Schröder. Ber. 11, 2130.
" " -----	" -----	2.275 -----	
Potassium ethylsulphate -----	$\text{K C}_2 \text{H}_5 \text{S O}_4$ -----	1.792 -----	Schröder. Ber. 11, 2020.
" " -----	" -----	1.809 -----	
Barium ethylsulphate -----	$\text{Ba (C}_2 \text{H}_5 \text{S O}_4)_2 \cdot 2 \text{H}_2 \text{O}$ -----	2.0714, 22°.6 -----	Geppert. F. W. C.
" " -----	" -----	2.080, 21°.7 -----	
" " -----	" -----	2.055 -----	Schröder. Ber. 11, 2130.
Didymium ethylsulphate -----	$\text{Di (C}_2 \text{H}_5 \text{S O}_4)_3 \cdot 9 \text{H}_2 \text{O}$ -----	1.860, 17°.8 -----	Cleve. U. N. A. 1885.
" " -----	" -----	1.867, 18° -----	
Samarium ethylsulphate -----	$\text{Sm (C}_2 \text{H}_5 \text{S O}_4)_3 \cdot 9 \text{H}_2 \text{O}$ -----	1.874 -----	" "
" " -----	" -----	1.885 -----	
Potassium propylsulphate -----	$\text{K C}_3 \text{H}_7 \text{S O}_4$ -----	1.794 -----	Schröder. Ber. 11, 2020.
" " -----	" -----	1.831 -----	
Barium propylsulphate -----	$\text{Ba (C}_3 \text{H}_7 \text{S O}_4)_2 \cdot 2 \text{H}_2 \text{O}$ -----	1.839 -----	Geppert. F. W. C.
" " -----	" -----	1.844 -----	
" " -----	" -----	1.844 -----	Schröder. Ber. 11, 2130.
Potassium isobutylsulphate. -----	$\text{K C}_4 \text{H}_9 \text{S O}_4$ -----	1.472 -----	Schröder. Ber. 11, 2020.
" " -----	" -----	1.486 -----	
Barium isobutylsulphate -----	$\text{Ba (C}_4 \text{H}_9 \text{S O}_4)_2 \cdot 2 \text{H}_2 \text{O}$ -----	1.714, 22° -----	Whetstone. F. W. C.
" " -----	" -----	1.743, 24°.3 -----	
" " -----	" -----	1.778, 21°.2 -----	Schuermann. F. W. C.
" " -----	" -----	1.727 -----	
" " -----	" -----	1.738 -----	Schröder. Ber. 11, 2130.
Potassium amylsulphate -----	$\text{K C}_5 \text{H}_{11} \text{S O}_4$ -----	1.401 -----	Schröder. Ber. 11, 2020.
" " -----	" -----	1.418 -----	
Barium amylsulphate -----	$\text{Ba (C}_5 \text{H}_{11} \text{S O}_4)_2 \cdot 2 \text{H}_2 \text{O}$ -----	1.623, 21°.2 -----	Whetstone. F. W. C.
" " -----	" -----	1.632, 22° -----	
" " -----	" -----	1.638 -----	Schröder. Ber. 11, 2130.
" " -----	" -----	1.641 -----	
Potassium methylxanthate -----	$\text{K C H}_3 \text{C O S}_2$ -----	1.6754, 15°.2 -----	Bishop. F. W. C.
" " -----	" -----	1.7002 -----	
Potassium ethylxanthate -----	$\text{K C}_2 \text{H}_5 \text{C O S}_2$ -----	1.558, 21° -----	Geppert. F. W. C.
" " -----	" -----	1.5564, 18°.2 -----	
" " -----	" -----	1.5576, 21°.5 -----	H. Stallo. F. W. C.
Potassium isobutylxanthate. -----	$\text{K C}_4 \text{H}_9 \text{C O S}_2$ -----	1.3713, 15° -----	
" " -----	" -----	1.3832, 14°.5 -----	" "

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Lithium oxalate-----	$\text{Li}_2 \text{C}_2 \text{O}_4$ -----	2.1213, 17°.5--	Stolba. J. 1880, 283.
Sodium hydrogen oxalate-----	$\text{Na H C}_2 \text{O}_4 \cdot \text{H}_2 \text{O}$ -----	2.315 -----	Buignet. J. 14, 15.
Potassium oxalate -----	$\text{K}_2 \text{C}_2 \text{O}_4 \cdot \text{H}_2 \text{O}$ -----	2.104, m. of 2--	Playfair and Joule. M. C. S. 2, 401.
“ “ -----	“ -----	2.08 -----	Schiff. J. 12, 16.
Potassium hydrogen oxalate.	$\text{K H C}_2 \text{O}_4$ -----	1.965, m. of 2--	Playfair and Joule. M. C. S. 2, 401.
“ “ “	“ -----	2.030 -----	Schiff. J. 12, 16.
“ “ “	“ -----	2.088 -----	Buignet. J. 14, 15.
Potassium quadroxalate--	$\text{K H}_3 (\text{C}_2 \text{O}_4)_2 \cdot 2 \text{H}_2 \text{O}$	1.817 -----	Playfair and Joule. M. C. S. 2, 401.
“ “ --	“ --	1.765 -----	Schiff. J. 12, 16.
“ “ --	“ --	1.836 -----	Buignet. J. 14, 15.
Rubidium quadroxalate--	$\text{Rb H}_3 (\text{C}_2 \text{O}_4)_2 \cdot 2 \text{H}_2 \text{O}$	2.1246, 18° --	Stolba. J. 1877, 243.
Ammonium oxalate-----	$\text{Am}_2 \text{C}_2 \text{O}_4 \cdot \text{H}_2 \text{O}$ -----	1.461, m. of 2--	Playfair and Joule. M. C. S. 2, 401.
“ “ -----	“ -----	1.475 -----	Schiff. J. 12, 16.
“ “ -----	“ -----	1.470 -----	Buignet. J. 14, 15.
“ “ -----	“ -----	1.501 } -----	Schröder. Dm. 1873.
“ “ -----	“ -----	1.502 } -----	
Ammonium hydrogen oxalate.	$\text{Am H C}_2 \text{O}_4 \cdot \text{H}_2 \text{O}$ -----	1.563, m. of 3--	Playfair and Joule. M. C. S. 2, 401.
“ “ “	“ --	1.556 -----	Schiff. J. 12, 16.
Ammonium quadroxalate	$\text{Am H}_3 (\text{C}_2 \text{O}_4)_2 \cdot \text{H}_2 \text{O}$	1.589, m. of 2--	Playfair and Joule. M. C. S. 2, 401.
“ “ --	“ --	1.607 -----	Schiff. J. 12, 16.
Silver oxalate -----	$\text{Ag}_2 \text{C}_2 \text{O}_4$ -----	4.96, 10° -----	Husemann. B. D. Z.
“ “ -----	“ -----	5.005, 4°, ppt. }	Schröder. Ber. 10, 849.
“ “ -----	“ -----	5.029, 4°, cryst. }	
Thallium oxalate -----	$\text{Tl}_2 \text{C}_2 \text{O}_4$ -----	6.31 -----	Lamy and Des Cloi- zeaux. Nature, 1, 442.
Thallium hydrogen oxalate.	$\text{Tl H C}_2 \text{O}_4 \cdot \text{H}_2 \text{O}$ -----	3.971 -----	“ “
Zinc oxalate -----	$\text{Zn C}_2 \text{O}_4$ -----	2.547, 18°.3 }	Wilson. F. W. C.
“ “ -----	“ -----	2.562, 24°.5 }	
“ “ -----	“ -----	2.582, 17°.5 }	
Cadmium oxalate-----	$\text{Cd C}_2 \text{O}_4$ -----	3.310, 17° }	Freeman. F. W. C.
“ “ -----	“ -----	3.320, 18° }	
Calcium oxalate-----	$\text{Ca C}_2 \text{O}_4$ -----	2.106 -----	Schröder. Dm. 1873.
“ “ -----	“ -----	2.181 }	Schröder. Ber. 12, 561.
“ “ -----	“ -----	2.182 } 4°-- {	
“ “ -----	“ -----	2.200 }	
Barium oxalate-----	$\text{Ba C}_2 \text{O}_4$ -----	2.6578 -----	Schweitzer. Univer- sity of Missouri, special pub., 1876.
Lead oxalate -----	$\text{Pb C}_2 \text{O}_4$ -----	5.018 }	Schröder. Dm. 1873.
“ “ -----	“ -----	5.035 }	
Manganese oxalate -----	$\text{Mn C}_2 \text{O}_4$ -----	2.422, 21°.8 }	Freeman. F. W. C.
“ “ -----	“ -----	2.453, 20°.7 }	
“ “ -----	“ -----	2.457, 21°.8 }	
Humboldtine -----	$2 \text{Fe C}_2 \text{O}_4 \cdot 3 \text{H}_2 \text{O}$ -----	2.13 }	Dana's Mineralogy.
“ -----	“ -----	2.489 }	
Nickel oxalate -----	$\text{Ni C}_2 \text{O}_4$ -----	2.218, 19° -- }	Freeman. F. W. C.
“ “ -----	“ -----	2.2285, 19°.5 }	
“ “ -----	“ -----	2.235, 18°.5 }	
Cobalt oxalate-----	$\text{Co C}_2 \text{O}_4$ -----	2.296, 20°.5 }	“ “
“ “ -----	“ -----	2.325, 19° -- }	

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Stannous oxalate -----	$\text{Sn C}_2 \text{O}_4$ -----	3.558, 18 ----	Wilson. F.W. C.
" " -----	" -----	3.576, 22°.5 ----	
" " -----	" -----	3.584, 23°.5 ----	
Thorium oxalate -----	$\text{Th (C}_2 \text{O}_4)_2$ -----	4.637, 16° ----	Clarke. A. C. J. 2, 175.
Uranyl oxalate -----	$\text{U O}_2 \cdot \text{C}_2 \text{O}_4 \cdot 3 \text{H}_2 \text{O}$ -----	2.98 -----	Ebelmen. J. P. C. 27, 391.
Potassium copper oxalate.	$\text{K}_2 \text{Cu (C}_2 \text{O}_4)_2 \cdot 2 \text{H}_2 \text{O}$ -----	2.288, m. of 2 -----	Playfair and Joule. M. C. S. 2, 401.
Ammonium copper oxalate.	$\text{Am}_2 \text{Cu (C}_2 \text{O}_4)_2 \cdot 2 \text{H}_2 \text{O}$ -----	1.923 -----	" "
Potassium chromoxalate.	$\text{K}_3 (\text{Cr C}_6 \text{O}_{12})_2 \cdot 3 \text{H}_2 \text{O}$ -----	2.1039, 23° ----	Bishop. F.W. C.
" " -----	" -----	2.1464, 24° ----	
Strontium chromoxalate.	$\text{Sr}_3 (\text{Cr C}_6 \text{O}_{12})_2 \cdot 10 \text{H}_2 \text{O}$ -----	2.148, 8°.8 ----	Kebler. F.W. C.
Strontium potassium chromoxalate.	$\text{Sr K (Cr C}_6 \text{O}_{12})_2 \cdot 6 \text{H}_2 \text{O}$ -----	2.155, 12°.8 ----	" "
Barium chromoxalate.	$\text{Ba}_3 (\text{Cr C}_6 \text{O}_{12})_2$ -----	2.570, 6°.8 ----	" "
" " -----	$\text{Ba}_3 (\text{Cr C}_6 \text{O}_{12})_2 \cdot 6 \text{H}_2 \text{O}$ -----	2.445, 13°.9 ----	" "
" " -----	$\text{Ba}_3 (\text{Cr C}_6 \text{O}_{12})_2 \cdot 12 \text{H}_2 \text{O}$ -----	2.372, 27° ----	" "
Sodium ferroxalate -----	$2 \text{Na}_3 (\text{Fe C}_6 \text{O}_{12})_2 \cdot 11 \text{H}_2 \text{O}$ -----	1.9731, 17°.5 ----	Eder and Valenta. Ber. 14, 1106.
Ammonium ferroxalate -----	$\text{Am}_3 (\text{Fe C}_6 \text{O}_{12})_2 \cdot 8 \text{H}_2 \text{O}$ -----	1.7785, 17°.5 ----	" "
Platosoxalic acid -----	$\text{Pt H}_2 (\text{C}_2 \text{O}_4)_2 \cdot \text{H}_2 \text{O}$ -----	2.94, 14° ----	Söderbaum. Upsala Diss. 1888.
Sodium platosoxalate -----	$\text{Na}_2 \text{Pt (C}_2 \text{O}_4)_2 \cdot 4 \text{H}_2 \text{O}$ -----	2.89, 17°.2 ----	" "
" " -----	$\text{Na}_2 \text{Pt (C}_2 \text{O}_4)_2 \cdot 5 \text{H}_2 \text{O}$ -----	2.92, 17°.2 ----	" "
Potassium platosoxalate.	$\text{K}_2 \text{Pt (C}_2 \text{O}_4)_2 \cdot 2 \text{H}_2 \text{O}$ -----	3.037, 11°.6 ----	" "
" " Light.	" -----	3.036, 12° ----	
" " Dark.	" -----	3.012, 12° ----	" "
Ammonium platosoxalate.	$\text{Am}_2 \text{Pt (C}_2 \text{O}_4)_2 \cdot 2 \text{H}_2 \text{O}$ -----	2.614, 11°.7 ----	" "
" " Light.	" -----	" -----	" "
" " Dark.	" -----	2.58, 11°.5 ----	" "
Platodiamine platosoxalate.	$\text{Pt (NH}_3)_4 \text{Pt (C}_2 \text{O}_4)_2$ -----	3.51, 13°.5 ----	" "
" " Light.	" -----	" -----	" "
" " Dark.	" -----	3.48, 13°.5 ----	" "
Didymium nitratoöxalate.	$\text{Di H}_2 (\text{NO}_3)_2 (\text{C}_2 \text{O}_4)_3 \cdot 11 \text{H}_2 \text{O}$ -----	2.424 } 13°.2 ----	{ Cleve. U. N. A. 1885.
" " -----	" -----	2.425 }	
Ammonium succinate -----	$\text{Am}_2 \text{C}_4 \text{H}_4 \text{O}_4$ -----	1.367, 10° ----	Zachariae. B. D. Z.
Silver succinate -----	$\text{Ag}_2 \text{C}_4 \text{H}_4 \text{O}_4$ -----	3.518, 10° ----	Husemann. B. D. Z.
" " -----	" -----	3.807 } 4° ----	Schröder. Ber. 10, 849.
" " -----	" -----	3.833 }	
Barium succinate -----	$\text{Ba C}_4 \text{H}_4 \text{O}_4$ -----	2.696 -----	Schröder. Ber. 11, 2129.
" " -----	" -----	2.699 -----	
Lead succinate -----	$\text{Pb C}_4 \text{H}_4 \text{O}_4$ -----	3.800, 10° ----	Husemann. B. D. Z.
Ammonium malate -----	$\text{Am}_2 \text{C}_4 \text{H}_4 \text{O}_5$ -----	1.509 -----	Wyrouboff. Bei. 8, 24.
Ammonium hydrogen malate.	$\text{Am C}_4 \text{H}_5 \text{O}_5$ -----	1.55 -----	Pasteur. J. 4, 392.
Silver malate -----	$\text{Ag}_2 \text{C}_4 \text{H}_4 \text{O}_5$ -----	4.0016 -----	Liebig and Redtenbacher. A. C. P. 38, 139.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium tartrate -----	$\text{Na}_2 \text{C}_4 \text{H}_4 \text{O}_6 \cdot 4 \text{H}_2 \text{O}$	1.794 -----	Buignet. J. 14, 15.
Potassium tartrate -----	$\text{K}_2 \text{C}_4 \text{H}_4 \text{O}_6$	1.975 -----	Schiff. J. 12, 16.
" " -----	$\text{K}_2 \text{C}_4 \text{H}_4 \text{O}_6 \cdot \text{H}_2 \text{O}$	1.960 -----	Buignet. J. 14, 15.
Potassium hydrogen tartrate.	$\text{K H C}_4 \text{H}_4 \text{O}_6$	1.943 -----	Schabus. J. 3, 378.
" " " -----	"	1.973 -----	Schiff. J. 12, 16.
" " " -----	"	1.956 -----	Buignet. J. 14, 15.
Ammonium tartrate -----	$\text{Am}_2 \text{C}_4 \text{H}_4 \text{O}_6$	1.566 -----	Schiff. J. 12, 16.
" " -----	"	1.523 -----	Buignet. J. 14, 15.
" " -----	"	1.601 -----	Wyrouboff. Bei. 8, 24.
Ammonium hydrogen tartrate.	$\text{Am H C}_4 \text{H}_4 \text{O}_6$	1.680 -----	Schiff. J. 12, 16.
Sodium potassium tartrate	$\text{Na K C}_4 \text{H}_4 \text{O}_6 \cdot 4 \text{H}_2 \text{O}$	1.74 -----	Mitscherlich.
" " " -----	"	1.767 -----	Schiff. J. 12, 16.
" " " -----	"	1.790 -----	Buignet. J. 14, 15.
" " " -----	"	1.77 -----	W. C. Smith. Am. J. P. 53, 145.
Sodium ammonium tartrate.	$\text{Na Am C}_4 \text{H}_4 \text{O}_6 \cdot 4 \text{H}_2 \text{O}$	1.58 -----	Mitscherlich.
" " " -----	"	1.576 -----	Pasteur. J. 2, 309.
" " " -----	"	1.587 -----	Schiff. J. 12, 16.
Potassium ammonium tartrate.	$\text{K Am C}_4 \text{H}_4 \text{O}_6 \cdot 4 \text{H}_2 \text{O}$	1.700 -----	" "
Rubidium tartrate -----	$\text{Rb}_2 \text{C}_4 \text{H}_4 \text{O}_6$	2.692 -----	Wyrouboff. Bei. 8, 24.
" " -----	$\text{Rb}_2 \text{C}_4 \text{H}_4 \text{O}_6 \cdot \text{H}_2 \text{O}$	2.584 -----	Wyrouboff. B. S. M. 6, 311.
Rubidium hydrogen tartrate.	$\text{Rb H C}_4 \text{H}_4 \text{O}_6 \cdot \frac{1}{2} \text{H}_2 \text{O}$	2.399 -----	" "
Rubidium lithium tartrate	$\text{Rb Li C}_4 \text{H}_4 \text{O}_6 \cdot \text{H}_2 \text{O}$	2.281 -----	Wyrouboff. B. S. M. 6, 53.
Rubidium sodium tartrate	$\text{Rb Na C}_4 \text{H}_4 \text{O}_6 \cdot 2\frac{1}{2} \text{H}_2 \text{O}$	2.200 -----	Wyrouboff. Ann. (6), 9, 221.
Silver tartrate -----	$\text{Ag}_2 \text{C}_4 \text{H}_4 \text{O}_6$	3.4321 -----	Liebig and Redtenbacher. A. C. P. 38, 139.
Thallium tartrate -----	$\text{Tl}_2 \text{C}_4 \text{H}_4 \text{O}_6$	5.110 -----	Wyrouboff. B. S. M. 6, 311.
" " -----	$\text{Tl}_2 \text{C}_4 \text{H}_4 \text{O}_6 \cdot \frac{1}{2} \text{H}_2 \text{O}$	4.658 -----	Lamy and Des Cloizeaux. Nature, 1, 142.
" " -----	"	4.740 -----	Wyrouboff. B. S. M. 9, 102.
Thallium hydrogen tartrate.	$\text{Tl H C}_4 \text{H}_4 \text{O}_6$	3.496 -----	Lamy and Des Cloizeaux. Nature, 1, 142.
" " " -----	$\text{Tl H C}_4 \text{H}_4 \text{O}_6 \cdot \frac{1}{2} \text{H}_2 \text{O}$	3.399 -----	Wyrouboff. B. S. M. 6, 311.
Thallium lithium tartrate	$\text{Tl Li C}_4 \text{H}_4 \text{O}_6 \cdot \text{H}_2 \text{O}$	3.356 -----	Wyrouboff. B. S. M. 6, 53.
Thallium sodium tartrate	$\text{Tl Na C}_4 \text{H}_4 \text{O}_6 \cdot 2\frac{1}{2} \text{H}_2 \text{O}$	3.120 -----	Wyrouboff. Ann. (6), 9, 221.
Strontium tartrate -----	$\text{Sr C}_4 \text{H}_4 \text{O}_6$	2.575, 17°.3	Joslin. F. W. C.
" " -----	"	2.579, 17°.1	
" " -----	"	2.593, 17°.4	
" " -----	$\text{Sr C}_4 \text{H}_4 \text{O}_6 \cdot 4 \text{H}_2 \text{O}$	1.961, 19°	
" " -----	"	1.966, 19°.2	" "

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Strontium tartrate-----	$\text{Sr C}_4\text{H}_4\text{O}_6 \cdot 4\text{H}_2\text{O}$	1.972, 18°.1	Joslin. F. W. C.
Barium tartrate-----	$\text{Ba C}_4\text{H}_4\text{O}_6$	2.965, 21°.5	" "
" "-----	"	2.974, 21°.9	
" "-----	"	2.980, 20°.8	
Lead tartrate-----	$\text{Pb C}_4\text{H}_4\text{O}_6$	3.998, 16°.5	" "
" "-----	"	4.001, 17°.5	
" "-----	"	4.037, 17°.7	
Potassium tartrantimonite, or tartar-emetie---	$2\text{K C}_4\text{H}_4\text{SbO}_7 \cdot \text{H}_2\text{O}$	2.5569	Pasteur. Ann. (3), 28, 86.
" "-----	"	2.607	Schiff. J. 12, 16.
" "-----	"	2.588	Buignet. J. 14, 15.
" "-----	"	2.597	Topsoë and Christiansen.
Ammonium tartrantimonite.	$2\text{Am C}_4\text{H}_4\text{SbO}_7 \cdot \text{H}_2\text{O}$	2.324	Topsoë. C. C. 4, 76.
Silver tartrantimonite----	$\text{Ag C}_4\text{H}_4\text{SbO}_7$	3.4805, 18°.2	Evans. F. W. C.
Thallium tartrantimonite----	$2\text{Tl C}_4\text{H}_4\text{SbO}_7 \cdot \text{H}_2\text{O}$	3.99	Lamy and Des Cloizeaux. Nature, 1, 142.
Barium tartrantimonite --	$\text{Ba (C}_4\text{H}_4\text{SbO}_7)_2 \cdot 2\text{H}_2\text{O}$	3.112, 19°	Joslin. F. W. C.
Potassium borotartrate----	$\text{K C}_4\text{H}_4\text{BO}_7$	1.832	Buignet. J. 14, 15.
Potassium racemate-----	$\text{K}_2\text{C}_4\text{H}_4\text{O}_6 \cdot 2\text{H}_2\text{O}$	1.58	Mitscherlich.
Potassium hydrogen racemate.	$\text{K H C}_4\text{H}_4\text{O}_6$	1.954	Wyruboff. B. S. M. 6, 311.
Potassium lithium racemate.	$\text{K Li C}_4\text{H}_4\text{O}_6$	1.610	Wyruboff. B. S. M. 6, 53.
Potassium sodium racemate.	$\text{K Na C}_4\text{H}_4\text{O}_6 \cdot 3\text{H}_2\text{O}$	1.783	Wyruboff. B. S. C. 45, 52.
Rubidium racemate-----	$\text{Rb}_2\text{C}_4\text{H}_4\text{O}_6$	2.640	Wyruboff. Bei. 8, 24.
Rubidium hydrogen racemate.	$\text{Rb H C}_4\text{H}_4\text{O}_6$	2.282	Wyruboff. B. S. M. 6, 311.
Rubidium lithium racemate.	$\text{Rb Li C}_4\text{H}_4\text{O}_6$	2.192	Wyruboff. Bei. 8, 24.
Ammonium racemate----	$\text{Am}_2\text{C}_4\text{H}_4\text{O}_6$	1.601	Wyruboff. B. S. M. 9, 102.
Ammonium hydrogen racemate.	$\text{Am H C}_4\text{H}_4\text{O}_6$	1.636	Wyruboff. B. S. M. 6, 311.
Ammonium sodium racemate.	$\text{Am Na C}_4\text{H}_4\text{O}_6 \cdot \text{H}_2\text{O}$	1.740	Wyruboff. Ann. (6), 9, 221.
Silver racemate -----	$\text{Ag}_2\text{C}_4\text{H}_4\text{O}_6$	3.7752	Liebig and Redtenbacher. A. C. P. 38, 139.
Thallium racemate -----	$\text{Tl}_2\text{C}_4\text{H}_4\text{O}_6$	4.783	{ Two varieties. Wyruboff. B. S. M. 9, 102.
" "-----	"	4.803	
" "-----	$2\text{Tl}_2\text{C}_4\text{H}_4\text{O}_6 \cdot \text{H}_2\text{O}$	4.659	
Thallium hydrogen racemate.	$\text{Tl H C}_4\text{H}_4\text{O}_6$	3.494	Lamy and Des Cloizeaux. Nature, 1, 142.
Thallium lithium racemate.	$\text{Tl Li C}_4\text{H}_4\text{O}_6 \cdot 2\text{H}_2\text{O}$	3.144	Wyruboff. B. S. M. 6, 311.
Thallium sodium racemate	$\text{Tl Na C}_4\text{H}_4\text{O}_6 \cdot 2\text{H}_2\text{O}$	3.289	Wyruboff. Ann. (6), 9, 221.
			" "

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Potassium racemantimonite.	$2 K C_4 H_4 Sb O_7 \cdot H_2 O$	2.4768 -----	Pasteur. Ann. (3), 28, 86.
Potassium citrate* -----	$K_3 C_6 H_5 O_7 \cdot H_2 O$ --	1.98 -----	W. C. Smith. Am. J. P. 53, 145.
Trisodium citrate -----	$2 Na_3 C_6 H_5 O_7 \cdot 11 H_2 O$	1.857, 23°.5 } -----	Blakemore. F.W.C.
“ “ -----	“ “ -----	1.859, 24° -- } -----	
Diammonium citrate -----	$Am_2 C_6 H_6 O_7$ -----	1.479, 22° -----	“ “
Uranyl oleate -----	$U O_2 (C_{18} H_{33} O_2)_2$ --	1.13 -----	Gibbons. Ber. 16, 964.
Calcium hippurate -----	$2 Ca C_{18} H_{16} N_2 O_6 \cdot 3 H_2 O$	1.318 -----	Schabus. J. 3, 411.
Potassium orthonitrophenate.	$K C_6 H_4 N O_3 \cdot H_2 O$	1.682, 20° -----	Post and Mehrrens. Ber. 8, 1552.
Silver orthonitrophenate --	$Ag C_6 H_4 N O_3$ -----	2.661, 20° -----	“ “
Barium orthonitrophenate	$Ba (C_6 H_4 N O_3)_2$ -----	2.3301, 20° -----	“ “
Lead orthonitrophenate --	$Pb_2 O (C_6 H_4 N O_3)_2 \cdot H_2 O$	2.712, 20° -----	“ “
Potassium metanitrophenate.	$K C_6 H_4 N O_3 \cdot 2 H_2 O$ --	1.691, 20° -----	“ “
Barium metanitrophenate	$Ba (C_6 H_4 N O_3)_2 \cdot 2 H_2 O$ --	2.343, 20° -----	“ “
Lead metanitrophenate --	$Pb O (C_6 H_4 N O_3)$ -----	2.694, 20° -----	“ “
Potassium paranitrophenate.	$K C_6 H_4 N O_3 \cdot 2 H_2 O$ --	1.652, 20° -----	“ “
Silver paranitrophenate --	$Ag C_6 H_4 N O_3 \cdot 2 H_2 O$ --	2.652, 20° -----	“ “
Barium paranitrophenate --	$Ba (C_6 H_4 N O_3)_2 \cdot 8 H_2 O$ --	2.322, 20° -----	“ “
Lead paranitrophenate --	$Pb O (C_6 H_4 N O_3) \cdot 2 H_2 O$ --	2.682, 20° -----	“ “
Potassium α dinitrophenate	$K C_6 H_3 N_2 O_5 \cdot H_2 O$ --	1.778, 20° -----	“ “
Silver α dinitrophenate --	$Ag C_6 H_3 N_2 O_5 \cdot H_2 O$ --	2.755, 20° -----	“ “
Barium α dinitrophenate --	$Ba (C_6 H_3 N_2 O_5)_2 \cdot 4 H_2 O$ --	2.439, 20° -----	“ “
Lead α dinitrophenate --	$Pb O H (C_6 H_3 N_2 O_5) \cdot 2 H_2 O$	2.817, 20° -----	“ “
Potassium β dinitrophenate	$K C_6 H_3 N_2 O_5$ -----	1.757, 20° -----	“ “
Silver β dinitrophenate --	$Ag C_6 H_3 N_2 O_5$ -----	2.733, 20° -----	“ “
Barium β dinitrophenate --	$Ba (C_6 H_3 N_2 O_5)_2 \cdot H_2 O$ --	2.406, 20° -----	“ “
Lead β dinitrophenate --	$Pb O (C_6 H_3 N_2 O_5)_2$ --	2.807, 20° -----	“ “
Lithium picrate -----	$Li C_6 H_2 N_3 O_7$ -----	1.716, 19° -----	Beamer. F. W. C.
“ “ -----	“ “ -----	1.724, 20° -----	
“ “ -----	“ “ -----	1.740, 20° -----	
Potassium picrate -----	$K C_6 H_2 N_3 O_7$ -----	1.852, 20° -----	Post and Mehrrens. Ber. 8, 1552.
Silver picrate -----	$Ag C_6 H_2 N_3 O_7$ -----	2.816, 20° -----	“ “
Thallium picrate -----	$Tl C_6 H_2 N_3 O_7$ -----	3.039 -----	Lamy and Des Cloizeaux. Nature, 1, 142.
Barium picrate -----	$Ba (C_6 H_2 N_3 O_7)_2 \cdot 4 H_2 O$	2.518, 20° -----	Post and Mehrrens. Ber. 8, 1552.
Lead picrate -----	$Pb (C_6 H_2 N_3 O_7)_2 \cdot H_2 O$	2.831, 20° -----	“ “
Samarium picrate -----	$Sm (C_6 H_2 N_3 O_7)_3 \cdot 8 H_2 O$	1.954, 18°.5 -----	Cleve. U. N. A. 1885.
Ammonium benzoate -----	$Am C_7 H_5 O_2$ -----	1.260 } 4° -- { -----	Schröder. Ber. 12, 1611.
“ “ -----	“ “ -----	1.264 } -----	

* Smith gives this salt under the name “potassii citras,” and assigns no formula.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Silver benzoate -----	$\text{Ag C}_7\text{H}_5\text{O}_2$ -----	2.258 -----	Schröder. Ber. 9, 1889.
Calcium benzoate -----	$\text{Ca (C}_7\text{H}_5\text{O}_2)_2 \cdot 3\text{H}_2\text{O}$ -----	1.435 } 4° -- {	Schröder. Ber. 12, 1611.
Barium benzoate -----	$\text{Ba (C}_7\text{H}_5\text{O}_2)_2 \cdot 3\text{H}_2\text{O}$ -----	1.792 } 4° -- {	Schröder. Ber. 12, 561.
Silver cinnamate -----	$\text{Ag C}_9\text{H}_7\text{O}_2$ -----	2.073, 4° -----	" "
Mellite -----	$\text{Al}_2\text{C}_{12}\text{O}_{12} \cdot 18\text{H}_2\text{O}$ -----	1.636 } -----	Kenngott.
" -----	" -----	1.642 } -----	

LXXI. SALTS OF ORGANIC BASES WITH INORGANIC ACIDS.*

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Tetramethylammonium iodide. " " " " -----	$\text{N (C H}_3)_4\text{I}$ -----	1.827, 17° -- } 1.831, 19°.5 } 1.838 } 4° -- { 1.844 } -----	Owens. F. W. C. Schröder. Ber. 12, 561.
Tetrethylammonium iodide. " " " " -----	$\text{N (C}_2\text{H}_5)_4\text{I}$ -----	1.556 } 4° -- { 1.559 } ----- 1.561 } -----	" "
Tetramethylammonium mercury iodide. " " " " -----	$\text{N (C H}_3)_4\text{I} \cdot \text{Hg I}_2$ -----	3.968, 24° -- } 3.971, 24° -- } 3.976, 23°.5 } 4.003, 23°.2 }	Owens. F. W. C.
Ethylamine platinchloride " " " " -----	$(\text{NC}_2\text{H}_7 \cdot \text{H Cl})_2\text{PtCl}_4$ -----	2.250 } 19° { 2.255 } -----	Clarke. A. C. J. 2, 175.
Ethylamine aurochloride. " " " " -----	$\text{N C}_2\text{H}_7 \cdot \text{H Cl} \cdot \text{Au Cl}_3$ -----	2.824 -----	Topsoë. S. W. A. 73, 97.
Diethylamine aurochloride. " " " " -----	$\text{NC}_4\text{H}_{11} \cdot \text{H Cl} \cdot \text{Au Cl}_3$ -----	2.436 -----	" "
Triethylamine aurochloride. " " " " -----	$\text{NC}_6\text{H}_{15} \cdot \text{H Cl} \cdot \text{Au Cl}_3$ -----	2.197 -----	" "
Guanidine carbonate. " " " " -----	$(\text{C H}_5\text{N}_3)_2\text{H}_2\text{C O}_3$ -----	1.238 ----- } 1.251 ----- }	Schröder. Ber. 13, 1070.
Aniline chlorhydrate " " " " -----	$\text{C}_6\text{H}_7\text{N} \cdot \text{H Cl}$ -----	1.201 } 4° -- { 1.216 } ----- 1.227 } -----	Schröder. Ber. 12, 1611.
Aniline iodate. " " " " -----	$\text{C}_6\text{H}_7\text{N} \cdot \text{H I O}_3$ -----	1.480, 15° -----	Beamer. F. W. C.
Aniline nitrate. " " " " -----	$\text{C}_6\text{H}_7\text{N} \cdot \text{H N O}_3$ -----	1.356 } 4° -- { 1.360 } -----	Schröder. Ber. 12, 1611.
Aniline sulphate. " " " " -----	$(\text{C}_6\text{H}_7\text{N})_2 \cdot \text{H}_2\text{S O}_4$ -----	1.377, 4° -----	" "
Aniline tartrantimonite. " " " " -----	$\text{C}_6\text{H}_7\text{N} \cdot \text{C}_4\text{H}_5\text{Sb O}_7$ -----	1.890, 18° -----	Evans. F. W. C.
Rosaniline chlorhydrate. " " " " -----	$\text{C}_{20}\text{H}_{19}\text{N}_3 \cdot \text{H Cl}$ -----	1.220 -----	Rüdorff. Ber. 12, 252.
Diazobenzene nitrate. " " " " -----	$\text{C}_6\text{H}_4\text{N}_2 \cdot \text{H N O}_3$ -----	1.37 -----	Berthelot and Vieille. Bei. 5, 573.
Berberine chlorhydrate. " " " " -----	$\text{C}_{20}\text{H}_{17}\text{N O}_4 \cdot \text{H Cl}$ -----	1.397, 19°.4 -----	Clarke. A. C. J. 2, 174.
Berberine platinchloride. " " " " -----	$(\text{C}_{20}\text{H}_{17}\text{N O}_4 \cdot \text{H Cl})_2\text{Pt Cl}_4$ -----	1.758, 19° -----	" "

*Aniline tartrantimonite is included in this table for reasons of convenience.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Strychnine platinchloride	$(C_{21}H_{22}N_2O_2 \cdot HCl)_2 \cdot PtCl_4$	1.779, 13°.5---	Clarke. A. C. J. 2, 174.
Cinchonine chlorhydrate.	$C_{20}H_{24}N_2O \cdot HCl$	1.234 -----	Hesse. J. 15, 371.
Picolinic acid platinchloride.	$(C_6H_5N_2O_2 \cdot HCl)_2 \cdot PtCl_4 \cdot 2H_2O$	2.0672, 21°.8---	Weidel. Ber. 12, 1989.
Nicotinic acid platinchloride.	$(C_6H_5N_2O_2 \cdot HCl)_2 \cdot PtCl_4 \cdot 2H_2O$	2.1297, 21°.8---	" "
Triethylphosphin platinochloride.	$PtCl_2 \cdot (C_6H_5P)_2$	1.5, 10° -----	Cahours and Gal. Z. C. 13, 437.

LXXII. MISCELLANEOUS ORGANIC COMPOUNDS.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethyl selenite-----	$(C_2H_5)_2SeO_3$ -----	1.49, 16°.5---	Michaelis. A. C. P. 241, 159.
Glucose with sodium chloride.	$2C_6H_{12}O_6 \cdot NaCl \cdot H_2O$	1.55 } 11°----	Bödeker. B. D. Z.
" " "	" "	1.59 }	
Cane sugar with sodium iodide.	$2C_{12}H_{22}O_{11} \cdot 3NaI \cdot 3H_2O$	1.854 -----	Gill. J. C. S. 24, 269.
Ferrous sucrocarbonate---	$3C_{12}H_{22}O_3 \cdot 2FeCO_3$ ---	1.85 -----	Tanret. J. C. S. 40, 157.
Salt from lead acetate and potassium triiodide.	$Pb_8K_6C_{36}H_{54}O_{28}I_{17}$ ---	3.084 -----	Johnson. C. N. 37, 110.
Chloraurotriethylphosphorous ether.	$AuClP(O C_2H_5)_3$ ---	2.025 -----	Lindet. C. R. 103, 1014.

APPENDIX.

NOTE ON THE SPECIFIC GRAVITY OF WOOD.

Although wood is a substance which does not come within the scope of these tables, the following references to literature are given as a matter of convenience.

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KARMARSCH.—Dove's Repertorium, 1, 141.

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MENDENHALL.—Ohio Agricultural and Mechanical College, Report for 1878.

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SMITH.—Journ. Chem. Soc., June, 1880, p. 417.

WILEY.—Purdue University (Indiana) Report, No. 2, 1876.

Many figures are also given in Böttger's "Tabellarische Uebersicht."

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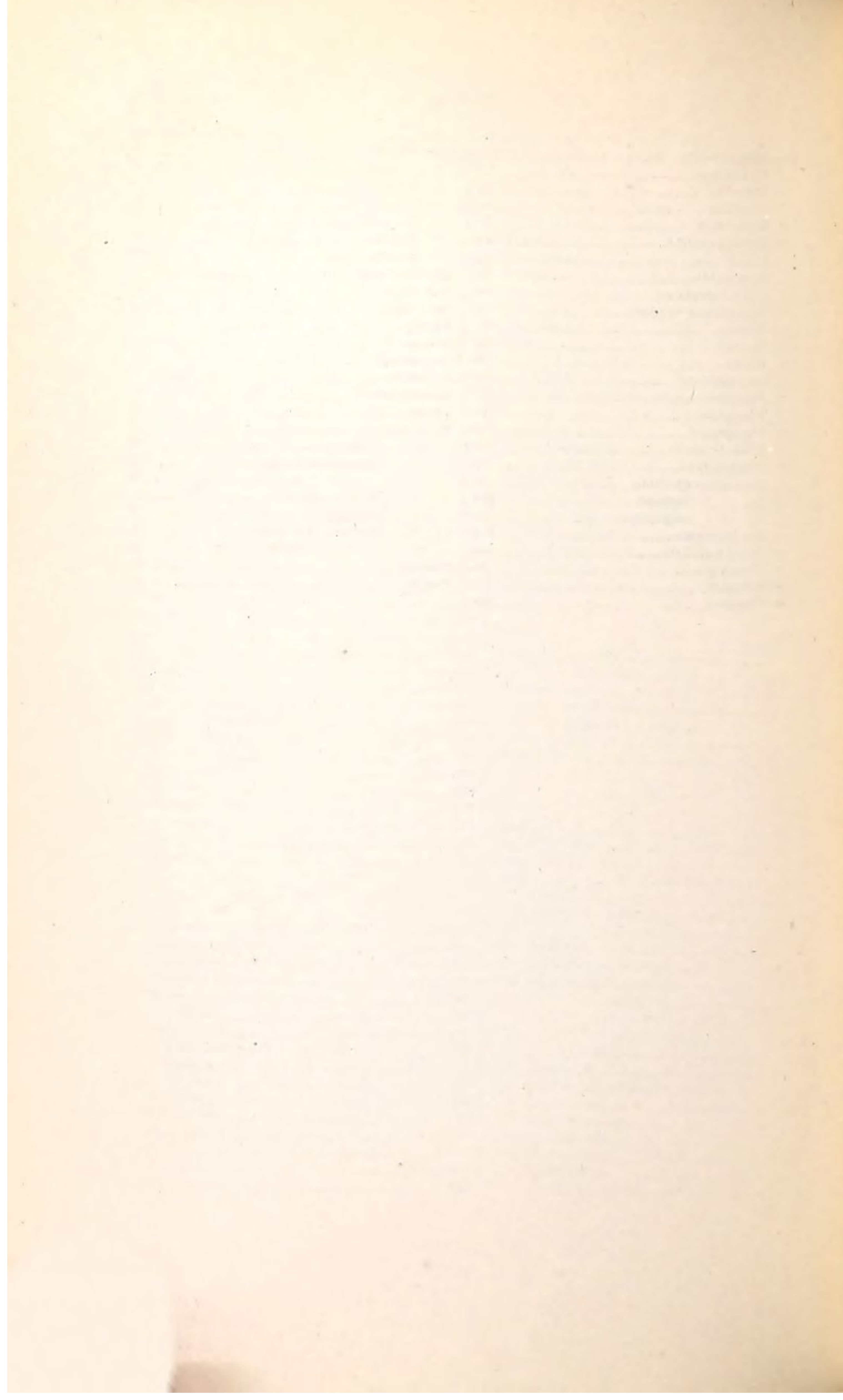
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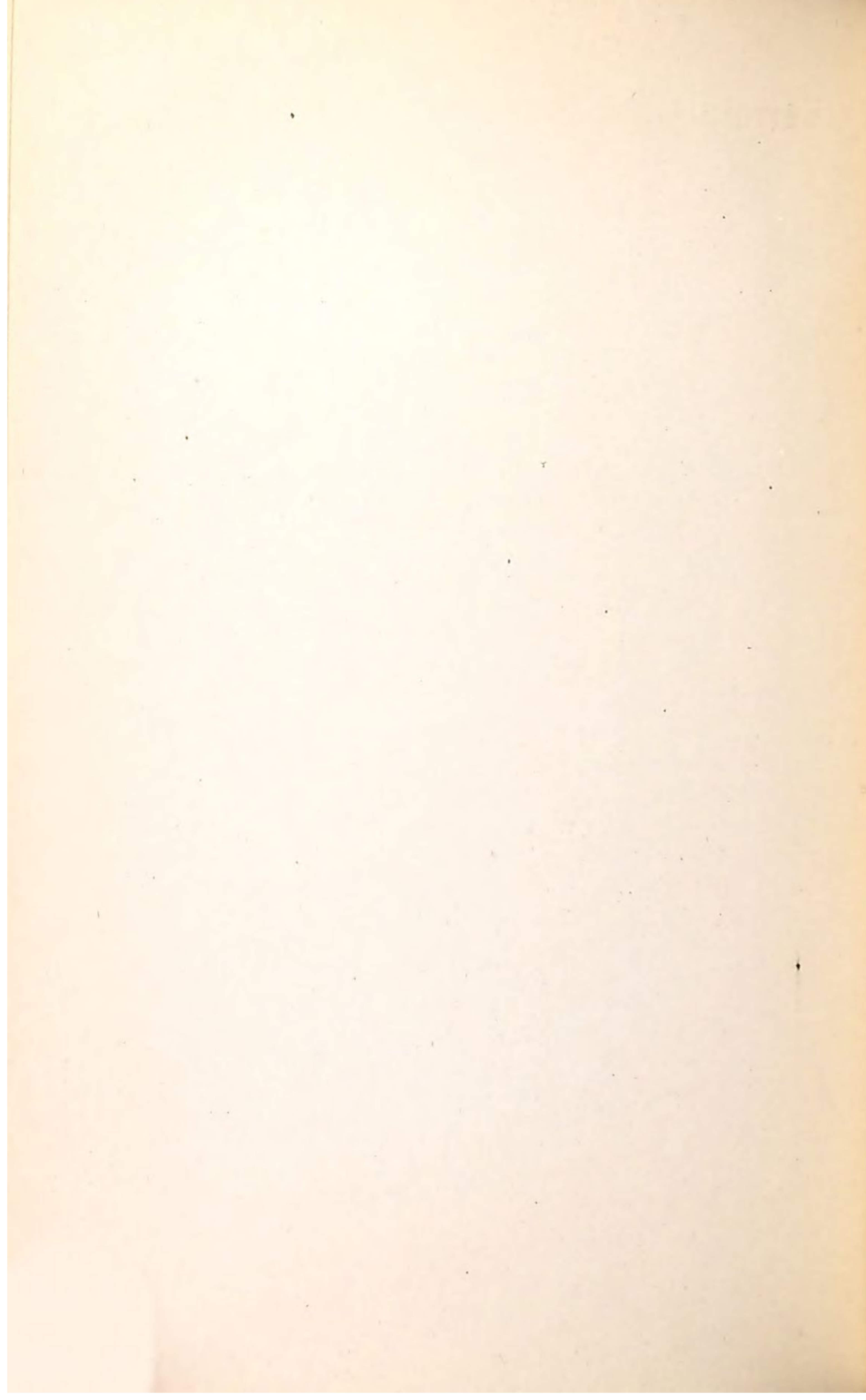
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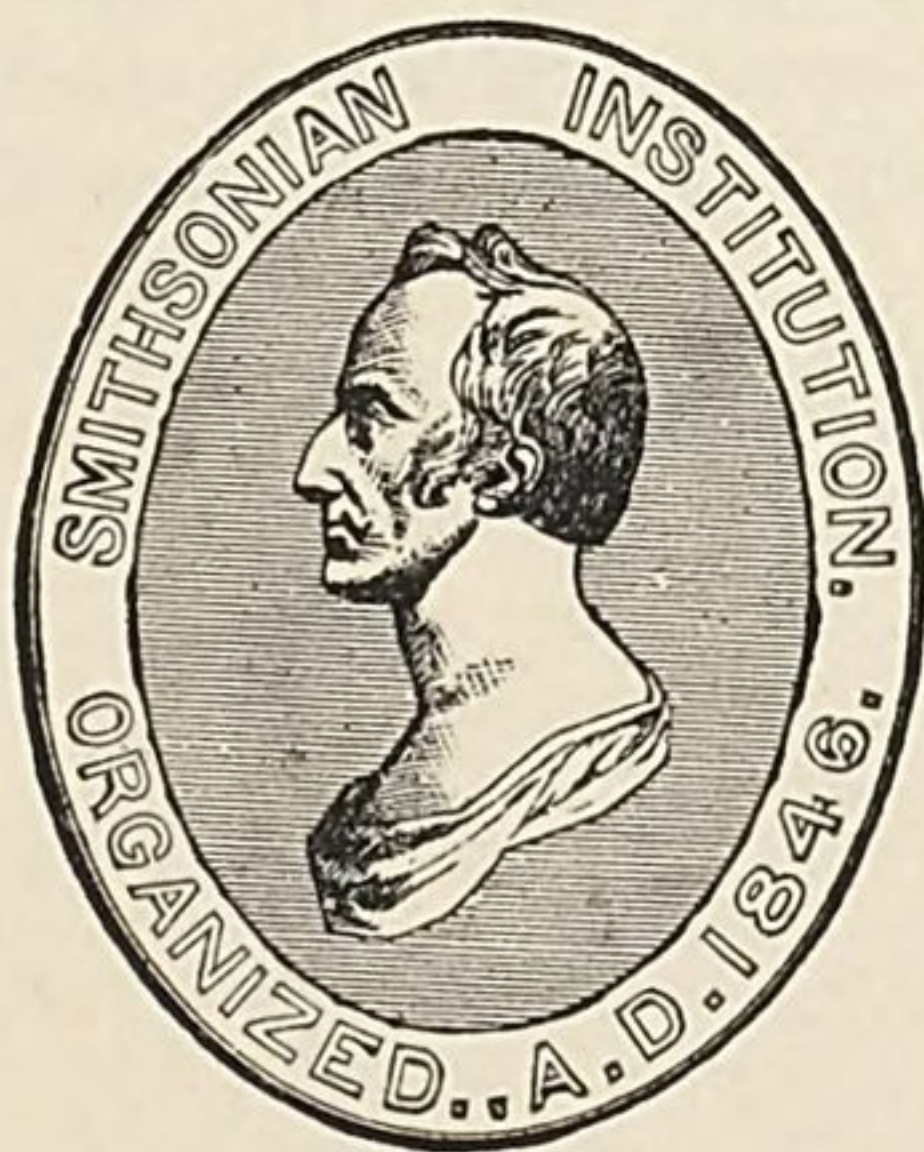


SMITHSONIAN MISCELLANEOUS COLLECTIONS.

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INDEX
TO THE
LITERATURE
OF THE
SPECTROSCOPE.

ALFRED TUCKERMAN, PH. D.



WASHINGTON:
PUBLISHED BY THE SMITHSONIAN INSTITUTION.
1888.

INDEX

PLATE

SPECTROSCOPE

PRINTED AND STEREOTYPED BY

JUDD & DETWEILER,

AT WASHINGTON, D. C.



ADVERTISEMENT.

With the rapid accumulation of scientific memoirs and discussions, published from year to year in numerous journals and society proceedings, a constantly larger expenditure of time and labor is required by both the investigator and the student, to learn the sources of information and the condition of discovery in any given field. Hence is felt the growing need of classified indexes to the work done in the various fields of research, and hence the corresponding tendency of the age to supply such demand.

The present work aims at a general survey of Spectroscopic Literature, with references to authorities in its more special subdivisions, and it has been prepared for the Institution by Mr. Tuckerman, without other remuneration than the expectation of serving the interests of scientific inquirers.

It has been brought down to the middle of the year 1887.

S. P. LANGLEY,
Secretary Smithsonian Institution.

WASHINGTON, *February*, 1888.

PREFACE.

This work is intended to be a list of all the books and smaller treatises, especially contributions to scientific periodicals, on the spectroscope and spectrum analysis from the beginning of our knowledge upon the subject until July, 1887; an Index or Bibliography of the Spectroscope and Spectrum Analysis.

It was begun at the suggestion of Dr. Wolcott Gibbs, whose work in connection with the subject is well known.

The object is to enable a chemist to find out at a glance all that has been published in any branch of his subject where the spectroscope is used, and what every writer has published.

The method pursued has been as follows: 1, to examine the bibliographies, booksellers' catalogues, and books on spectrum analysis for books; 2, to examine the scientific periodicals for the shorter treatises, the first and original contributions to the subject, and this was done volume by volume wherever there was no index to a series of years—as in the *Comptes Rendus* and the later volumes of the *Annales de Chimie et de Physique* and of (Poggendorff's, now Wiedemann's) *Annalen der Physik und Chemie*, as well as others. Use was made of the bibliography at the end of Roscoe's *Spectrum Analysis*, and in the reports of the British Association for 1881 and 1884, for such books and articles as the author could not find elsewhere. Credit is also due to the Astor Library and its managers for the means it afforded the author of making this Index.

After the greater part of the material was collected it was divided into such subjects as the titles indicated, in alphabetical order, easy finding being constantly kept in view. Titles have often been repeated more than once so as to make sure of their being found. Finally, at the suggestion of the Smithsonian Institution, the List of Authors was added.

The author hopes that his two objects, fullness and ready access of all the titles, will prove to have been gained.

NEW YORK, 1887.

PREFACE

This work is intended to be a first step in the study of the history of the human mind, and is written for the purpose of showing the progress of the human mind from the earliest times to the present day.

It is not intended to be a complete history of the human mind, but only a first step in the study of the history of the human mind.

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(He discovered the uses of muriatic acid mixed with antimony in correcting secondary spectra in telescopes.)

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Large Maps of the Solar Spectrum,

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21, *Oscillation-frequencies.*

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22, *Oxygen in the solar spectrum.*

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27, Red end of the solar spectrum.

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AURORA AND ZODIACAL LIGHT.

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Manganese arc spectrum.

Capron (J. R.). Photographed Spectra, London, 1877, p. 36.

On the light reflected by potassium permanganate.

Conroy (Sir J.). Proc. Royal Soc., **2**, 340-4; Phil. Mag., (5) **6**, 454-8; Jour. Chem. Soc., **36**, 425 (Abs.).

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Gouy. Comptes Rendus, **84**, 231; Chem. News, **35**, 107.

Absorptionslinien der Manganlösungen.

Hoppe-Seyler. Jour. prakt. Chemie, **90**, 303.

Spectra of manganese in blowpipe beads.

Horner (Charles). Chem. News, **25**, 139.

Anwendung der dunklen Linien des Spectrums als Reagens auf Mangan-säure.

Jahresber. d. Chemie, **5**, 125.

Absorptionsspectrum des Mangansuperchlorids.

Jahresber. d. Chemie (1869), 184.

Chlorure de manganèse en solution, étincelle courte; do., étincelle moyenne; do., dans le gaz.

Lecoq de Boisbaudran (F.). Spectres Lumineux, Paris, 1874, p. 110, 114, 120, planches XVII, XVIII.

Fluorescence des composés de manganèse dans la vide sous l'influence de l'arc voltaïque.

Lecoq de Boisbaudran (F.). Comptes Rendus, **103**, 468-471; Jour. Chem. Soc., **52**, 3 (Abs.); Beiblätter, **11**, 37.

Das Absorption der Mangansäure nicht die Umkehrung einer durch Manganchlorür gefärbten Flamme.

Müller (J.). Ann. Phys. u. Chem., **128**, 335.

Spectrum von Mangan.

Simmler (R. Th.). Ann. Phys. u. Chem., **115**, 425.

Das von übermangansaurem Kali reflectirte Licht.

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MAPS.

Recherches sur les spectres des métalloïdes.

Angström (A. J.) et Thalén (T. R.). Upsal., E. Berling, 1875, 4°. Extrait des *Nova Acta Reg. Soc. Sc. Upsal.*, Ser. III, Vol. IX. Avec deux planches.

(Wave-lengths. Spectra of carburetted hydrogen; of carbonic oxide; bioxide of nitrogen; of light at the negative pole; of oxygen; of carbon; of hydrogen; some isolated rays of carburetted hydrogen, and of carbonic oxide.)

Sur le spectre normal du Soleil, partie ultra-violette.

Cornu (A.). Paris, Gauthier-Villars, 1881, 4°. Extrait des *Annales de l'École normale supérieure*, (2) 9 (1880). Avec deux planches. (Wave-lengths.)

Étude du spectre solaire.

Fievez (Ch.). Bruxelles, F. Hayez, 1882, 4°. (Wave-lengths. Lines 6399 to 4522.) Extrait des *Annales de l'Observatoire royal de Bruxelles*, n. sér., t. IV.

Étude de la région rouge (A-C.) du spectre solaire.

Fievez (Ch.). F. Hayez, Bruxelles, 1883, 4°. Extrait des *Annales de l'Observatoire royal de Bruxelles*, n. sér., t. V. Avec deux planches. (Wave-lengths. Lines 7500 to 6500.)

Studien auf dem Gebiete der Absorptionsspectralanalyse.

Hasselberg (B.). St. Pétersbourg, et à Leipzig (L. Voss), 1878, 4°. Mit vier Karten. *Mém. Acad. imp. des Sci. de St. Pétersbourg*, (7) 26, No. 4. (Wave-lengths. Absorptionspectra of hypernitric acid at different densities, and absorptionspectrum of bromine.)

Ueber die Spectra der Cometen, und ihre Beziehung zu denjenigen gewisser Kohlenverbindungen.

Hasselberg (B.). St. Pétersbourg, 1880, Leipzig (G. Haessel), 4°. Mit einem Tafel. *Mém. de l'Acad. imp. St. Pétersbourg*, (7) 28, No. 2.

Untersuchungen über das zweite Spectrum des Wasserstoffs.

Hasselberg (B.). St. Pétersbourg, 1882, Leipzig (G. Haessel), 4°. *Mém. de l'Acad. imp. St. Pétersbourg*, (7) 30, No. 7. Mit einem Tafel. (Wave-lengths.)

Untersuchungen über das Sonnenspectrum und die Spectren der chemischen Elemente.

Kirchhoff (G.). Besondere Abdrücke aus den Abhandlungen der Berliner Akademie der Wissenschaften, 1861 und 1862. I. Theil, Dümmler, Berlin, 1864, 4°. II. Theil, Dümmler, Berlin, 1875, 4°. Mit vier Tafeln.

(He used an arbitrary scale.)

Recherches sur le spectre solaire ultra-violet, et sur la détermination des longueurs d'onde, suivies d'une note sur les formules de dispersion.

Mascart (E.). Extrait des Annales scientifiques de l'École normale supérieure, t. I (1864), Paris, Gauthier-Villars, 1864, 4°.

Recherches sur la détermination des longueurs d'onde.

Mascart (E.). Paris, Gauthier-Villars, 1866, 4°. Extrait des Annales de l'École normale supérieure, t. IV. Avec un planche.

[A photographic map of the solar spectrum is being prepared by Prof. Rowland, and some parts of it have been distributed, viz: wave-lengths, 0.0003675 to 0.0005796.]

Mémoire sur la détermination des longueurs d'onde des raies métalliques.

Thalén (Rob.). Upsal., W. Schultz, 1868, 4°. Mit zwei Tafeln. Extrait des Nova Acta Reg. Soc. Sci. Upsal., Ser. III, Vol. VI.

(Gives the wave-lengths of the bright rays of the metals.)

Le spectre d'absorption de la vapeur d'iode.

Thalén (Rob.). Upsal., Ed. Berling, 1869, 4°. Avec trois planches.

[Thollon's map of the solar spectrum is in Vol. I of the Annales de l'Observatoire de Nice, which is about to appear. Vol. II will contain a smaller map or sheets of the group B.]

MERCURY.

Mercury spark spectrum.

Capron (J. R.). Photographed Spectra, London, 1877, p. 37.

Spectre du cinabre, de l'oxide de mercure, de l'iodure de mercure.

Lallemand (A.). Comptes Rendus, **78**, 1272.

Bichlorure de mercure en solution, étincelle.

Lecoq de Boisbaudran (F.). Spectres Lumineux, Paris, 1874, p. 169, planche XIV.

On the dispersion of a solution of mercuric iodide.

Liveing (G. D.). Proc. Philosoph. Soc. Cambridge, **3**, 258-60; Beiblätter, **4**, 610 (Abs.).

Spectrum of mercury at elevated temperatures.

Lockyer (J. N.). Chem. News, **30**, 98; Nature, **30**, 78; Comptes Rendus, **78**, 178.

Emissionsspectra der Haloidverbindungen des Quecksilbers.

Peirce (B. O.). Ann. Phys. u. Chem., n. F. **6**, 597.

Ueber die Spectren des Wasserstoffs, Quecksilbers, und Stickstoffs.

Vogel (H. W.). Monatsber. d. Berliner Akad. (1879), 586-604; Beiblätter, **4**, 125-30; Amer. Jour. Sci., (3) **19**, 406 (Abs.).

METALS.

Researches on the spectra of the metalloids.

Angström (A. J.) and Thalén (Rob.). *Acta Soc. Upsala*, (3) **9**; *Nature*, **15**, 401 (Abs.); *Beiblätter*, **1**, 35-47; *Bull. Soc. chim. Paris*, n. s. **25**, 183.

Spectres d'émission infra-rouges des vapeurs métalliques.

Becquerel (H.). *Comptes Rendus*, **97**, 71-4; **99**, 374; *Chem. News*, **48**, 46 (Abs.); *Nature*, **28**, 287 (Abs.); *Beiblätter*, **7**, 701 (Abs.); *Amer. Jour. Sci.*, (3) **26**, 321 (Abs.); **28**, 459 (Abs.); *Ber. chem. Ges.*, **16**, 2487 (Abs.); *Jour. Chem. Soc.*, **46**, 1 (Abs.); *Zeitschr. f. analyt. Chemie*, **23**, 49 (Abs.); *Phil. Mag.*, Oct., 1884.

Procédé pour obtenir en projection les raies des métaux et leur renversement.

Boudréaux. *Jour. de Phys.*, **3**, 306.

Ueber die electrische Spectra der Metallen.

Brassack. *Zeitschr. f. d. Gesellsch. f. Naturwiss*, **9**, 185.

Dissociation of the metalloid elements.

Brodie (B. C.). *Nature*, **21**, 491-2.

Discoveries of the new alkaline metals.

Bunsen (R.). *Ber. d. Berliner Akad.*, 10 Mai, 1860; *Chem. News*, **3**, 132.

Kleinste im Inductionsfunken durch die Spectralanalyse noch erkennbare Gewichtsmenge verschiedener Metalle; do., im Bunsen'schen Gasflamme; Vergleich beider.

Cappel (E.). *Ann. Phys. u. Chem.*, **139**, 631.

Some experiments on metallic reflection with the spectroscope.

Conroy (Sir J.). *Proc. Royal Soc.*, **28**, 244.

On the projection of the spectra of the metals.

Cooke (J. P.). *Amer. Jour. Sci.*, (2) **40**, 243.

Renversement des raies spectrales des vapeurs métalliques.

Cornu (A.). *Comptes Rendus*, **73**, 332; *Bull. Soc. chim. Paris*, n. s. **15**, 5.

On the means of increasing the intensity of metallic spectra.

Crookes (W.). *Chem. News*, **5**, 234.

Analyse des spectres colorés par les métaux.

Debray (M. H.). Comptes Rendus, **54**, 169.

Sur l'emploi de la lumière Drummond et sur la projection des raies brillants des flammes colorées par les métaux.

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Remarques sur les métaux nouveaux de la gadolinite, et de la samarskite; holmium ou philippine, thulium, samarium, décipium.

Delafontaine. Comptes Rendus, **90**, 221.

Recherches sur l'influence des éléments électronégatifs sur le spectre des métaux, avec planches des spectres de chlorure de cuivre et de bromure de cuivre.

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Sur les spectres des métaux alcalins.

Diacon et Wolf. Mém. de l'Acad. de Montpellier, 1863; Comptes Rendus, **55**, 334.

Spectres des métalloïdes des familles du soufre, du chlore et de l'azote.

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On the use of the prism in qualitative analysis. (Gives the absorption spectra of many coloured metallic salts.)

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Das electrische Verhalten der im Wasser oder in Salzlösungen getauchten Metalle bei Bestrahlung durch Sonnen-oder Lampen-Licht.

Hankel (W.). Ann. Phys. u. Chem., n. F. **1**, 410.

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Hasselberg (B.). Bull. Acad. St. Pétersbourg, **27**, 405-17.

Auflösung heller Streifen in Metallspectren.

Jahresber. d. Chemie., **15**, 29.

Unterschiede in den Spectren bei Anwendung der Metalle oder der Chlor-metalle.

Jahresber. d. Chemie, **15**, 31, 32.

Constanz der Metallspectren.

Jahresber. d. Chemie, **15**, 32.

Electrische Metallspectren.

Jahresber. d. Chemie, **15**, 33; **16**, 104, 105, 107, 113; **17**, 115; **18**, 90, 91.

Einfluss nichtmetallischer Elemente auf die Spectra der Metalle.

Jahresber. d. Chemie, **18**, 87.

Umkehrung der hellen Spectrallinien der Metalle, insbesondere des Natriums in dunkle.

Jahresber. d. Chemie, **18**, 90.

Objectivdarstellung der Metallspectren.

Jahresber. d. Chemie, **26**, 147.

Spectren der Metalloïden.

Jahresber. d. Chemie, **26**, 149.

Metallspectra.

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Jahresber. d. Chemie, **28**, 124, 125.

Quelques spectres métalliques; plomb, chlorure d'or, thallium, lithium.

Lecoq de Boisbaudran (F.). Comptes Rendus, **77**, 1152; Bull. Soc. chim. Paris, n. s. **21**, 125-6.

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Spectra of metallic compounds.

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Reversal lines of metallic vapours.

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On the disappearance of some spectral lines and the variations of metallic spectra due to mixed vapours.

Liveing (G. D.) and Dewar (J.). *Proc. Royal Soc.*, **33**, 428-34; *Jour. Chem. Soc.*, **44**, 2-3 (Abs.); *Beiblätter*, **6**, 676 (Abs.).

Spectral lines of the metals developed by exploding gases.

Liveing (G. D.) and Dewar (J.). *Phil. Mag.*, (5) **18**, 161-73.

On the circumstances producing the reversal of the spectral lines of metals.

Liveing (G. D.) and Dewar (J.). *Proc. Philosoph. Soc. Cambridge*, **4**, 256-65; *Beiblätter*, **7**, 530 (Abs.).

Quantitative analysis of certain alloys by means of the spectroscope.

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On the absorption spectra of metals volatilized by the oxyhydrogen flame.

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Notice sur les nouveaux métaux obtenus du gadolinite.

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Mitscherlich (A.). *Ann. Phys. u. Chem.*, **121**, 474.

De l'influence de la température sur les spectres des métalloïdes.

Monckhoven (D. von). *Comptes Rendus*, **95**, 520.

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Sur les spectres des métalloïdes.

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Secchi (A.). Comptes Rendus, **77**, 173; Chem. News, **28**, 82.

Recherches sur l'absorption des rayons ultra-violetes par diverses substances; nouvelle étude des spectres d'absorption des métaux terreux.

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Sur la fluorescence des sels des métaux terreux.

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Thalén (R.). Ann. Chim. et Phys., (4) **18**, 202.

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Voigt (W.). Ann. Phys. u. Chem., (2) **25**, 95-114.

Leichte Umkehrung der Natriumlinie.

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Ueber die Absorption und Brechung des Lichtes in metallisch undurchsichtigen Körpern.

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Electrische Spectra der Metalle.

Willigen (S. M. von der). Ann. Phys. u. Chem., **106**, 619.

METEOROLOGICAL.

The spectroscope and weather forecasting.

Abercromby (R.). *Nature*, **26**, 572-3.

Rain-band Spectroscopy.

Bell (L.). *Amer. Jour. Sci.*, (3) **30**, 347.

A plea for the rain-band.

Capron (J. R.). *Observatory* (1882), 42-7, 71-4; *Beiblätter*, **6**, 485 (Abs.).

The spectroscope as an aid to forecasting the weather.

Cory (F. W.). *Quar. Jour. Meteorolog. Soc.*, **9**, 234-9.

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Hammerl (H.). *Sitzungsber. d. Wiener Akad.*, **86** II, 206-15; *Beiblätter*, **7**, 383 (Abs.).

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Konkoly (N. von). *Monthly Notices Astronom. Soc.*, **44**, 250-1.

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The green Sun.

Manley (W. R.). *Nature*, **28**, 611-12.

Observations on the rain-band from June, 1882, to Jan., 1883.

Mill (H. R.). *Proc. Royal Soc. Edinburgh*, **12**, 47-56.

Note sur les cyclones terrestres et les cyclones solaires.

Parville (H. de). *Comptes Rendus*, **77**, 1230-3.

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Romanes (C. H.). *Nature*, **25**, 507; *Beiblätter*, **6**, 486 (Abs.).

The spectroscope and the weather.

Smith (C. Mitchie). *Nature*, **12**, 366.

The green Sun.

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The remarkable sunsets.

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Smith (C. Piazzzi). *Nature*, **12**, 231-2, 252-3; *Ann. Phys. u. Chem.*, **157**, 175 (Abs.).

The warm rain-band in the daylight spectrum.

Smyth (C. Piazzzi). *Nature*, **14**, 9.

Three years' experimenting in spectrum analysis.

Smith (C. Piazzzi). *Nature*, **22**, 193.

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Smyth (C. Piazzzi). *Nature*, **26**, 551-4; *Beiblätter*, **6**, 877 (Abs.).

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Precédé pour déterminer la direction et la force du vent; suppression des girouettes; application aux cyclones.

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The use of the spectroscope in meteorological observations.

Upton (Winslow). *U. S. Signal Service Notes* (1882), No. 4; *Mem. Spettr. ital.*, **13**, 113-18.

MICROSCOPIC SPECTRA.

Prismatic examination of microscopic objects.

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Anwendung der Spectralanalyse auf mikroskopische Untersuchungen.

Jahresber. d. Chemie (1867), 105.

MINERAL WATERS.

La lithine, la strontiane et l'acide borique dans les eaux minérales de Contrexeville et Schinznach (Suisse).

Dieulafait. Comptes Rendus, **95**, 999-1001; Jour. Chem. Soc., **44**, 301 (Abs.).

Existence de l'acide borique en quantité notable dans les lacs salés de la période moderne et dans les eaux salines naturelles, qu'elles soient ou non en relation avec des produits éruptifs.

Dieulafait. Ann. Chim. et Phys., (5) **25**, 145-67.

Untersuchung einiger Mineralwässer und Soole mittelst Spectralanalyse.

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Sur l'origine de la lithine et de l'arsenic dans les eaux sulfatées calciques.

Schlagdenhauffen. Jour. de Pharm., (5) **6**, 457-63; Jour. Chem. Soc., **44**, 302 (Abs.).

Spectral-reactionen bündnerischen Gesteine und Mineralwässer.

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De la présence de la lithine dans le sol de la Limagne et dans les eaux minérales d'Auvergne. Dosage de cet alcali au moyen du spectroscopie.

Truchot (P.). Comptes Rendus, **78**, 1022-4; Ber. chem. Ges., **7**, 653.

MINIUM.

Spectre du minium.

Lallemand (A.). Comptes Rendus, **78**, 1272.

MOLYBDENUM.

Molybdenum arc spectrum.

Capron (J. R.). Photographed Spectra, London, 1877, p. 37.

MOSANDRUM.

Le mosandrum, un nouvel élément.

Smith (J. Lawrence). Comptes Rendus, **87**, 148-51; note par M. Delafontaine, Comptes Rendus, **87**, 600-2, and Jour. Chem. Soc., **36**, 117 (Abs.).

MULTIPLE SPECTRA.

Multiple Spectra.

Lockyer (J. N.). Nature, **22**, 4-7, 309-12, 562-5; Beiblätter, **5**, 118-22 (Abs.).

NICKEL.

Nickel arc spectrum; nickel spark spectrum; bismuth and nickel spark spectrum.

Capron (J. R.). Photographed Spectra, London, 1877, p. 20, 38.

Salpetersaure Nickellösung als Absorptionspräparat.

Emsmann (H.). Ann. Phys. u. Chem., Ergänzungsband, 1874, **6**, 334;
Phil. Mag., (4) **46**, 329; Jour. Chem. Soc., (2) **12**, 113.

Spectrum von Nickel.

Jahresber. d. Chemie, (1872) 145, (1873) 154.

Chlorure de nickel en solution, étincelle.

Lecoq de Boisbaudran (F.). Spectres Lumineux, Paris, 1874, p. 133,
planche XIX.

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Vogel (H. W.). Ber. chem. Ges., **12**, 2313-16; Beiblätter, **4**, 278
(Abs.); **5**, 118 (Abs.).

NIOBIUM.

Niobium arc spectrum.

Capron (J. R.). Photographed Spectra, London, 1877, p. 38.

NITROGEN.

Spectrum von Stickoxyd, und von Stickstoff.

Angström (A. J.). *Ann. Phys. u. Chem.*, **94**, 156-7.

Spectre de l'acide azotique fumant.

Becquerel (H.). *Comptes Rendus*, **85**, 1227.

Spectre de l'azote.

Becquerel (H.). *Comptes Rendus*, **90**, 1407.

Spectre du protoxyde de l'azote.

Becquerel (H.). *Comptes Rendus*, **90**, 1407.

Absorption spectrum of nitrogen peroxide.

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Observations of the lines of the solar spectrum, and on those produced by the Earth's atmosphere and by the action of nitrous acid gas.

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Carattere spettroscopico della soluzione ammoniacale di carminio, di cocciniglia e di altre sostanze.

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Capron (J. R.). *Photographed Spectra*, London, 1877, p. 55.

Sur le spectre d'absorption de l'acide pernitrique.

Chappuis (J.). *Comptes Rendus*, **94**, 946-8; *Jour. Chem. Soc.*, **42**, 1017 (Abs.); *Beiblätter*, **6**, 483 (Abs.); *Amer. Jour. Sci.*, (3) **24**, 58 (Abs.); *Jour. de Phys.*, (2) **3**, 48.

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Deslandres (H.). *Comptes Rendus*, **101** (1885), 1256-60; *Jour. Chem. Soc.*, **50**, 189 (Abs.).

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Spectrum von Ammoniak und von Schwefelammon.

Dibbits (H. C.). *Ann. Phys. u. Chem.*, **122**, 518, 534.

Les lacs salpêtres naturels du Chili et du Pérou.

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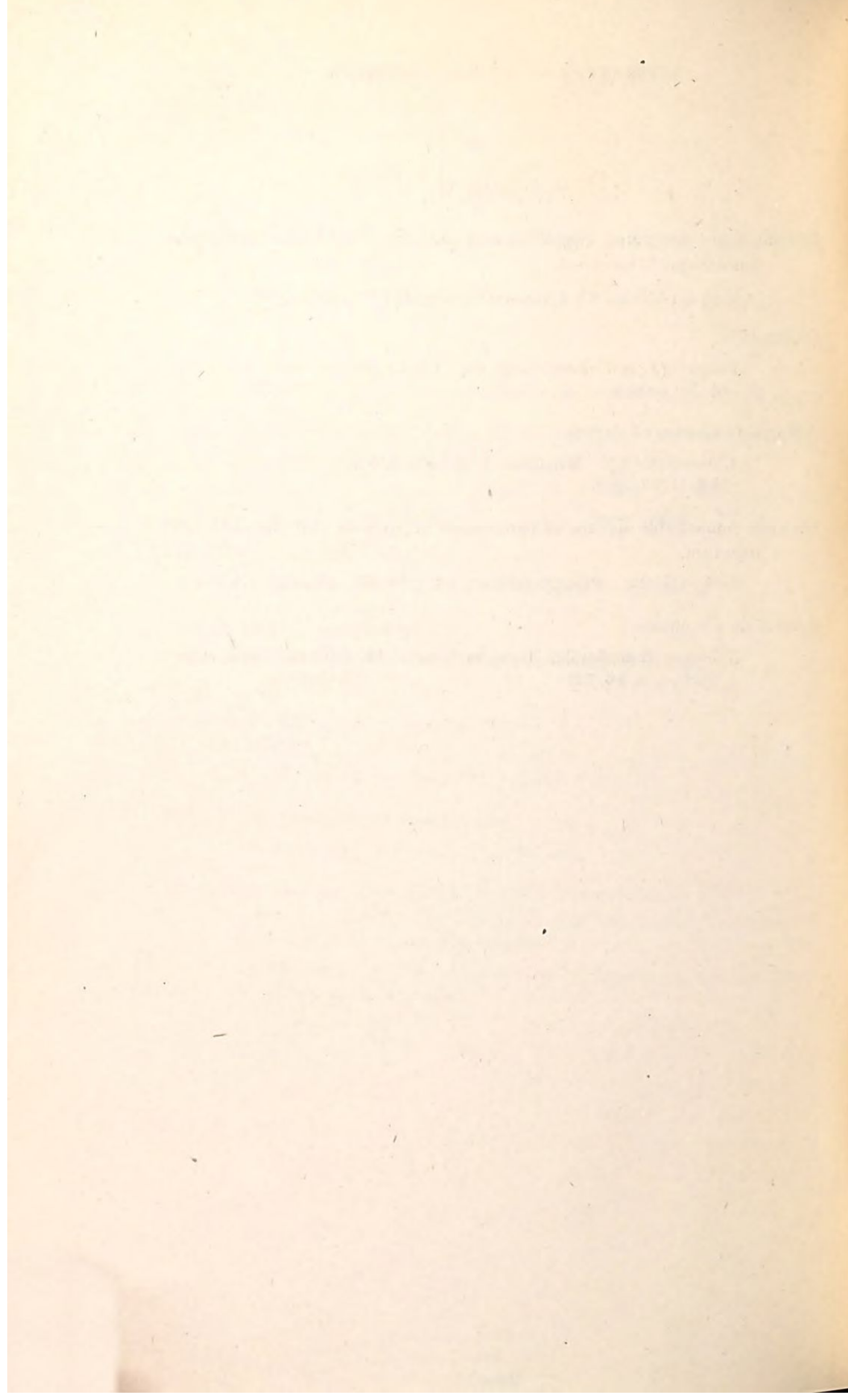
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